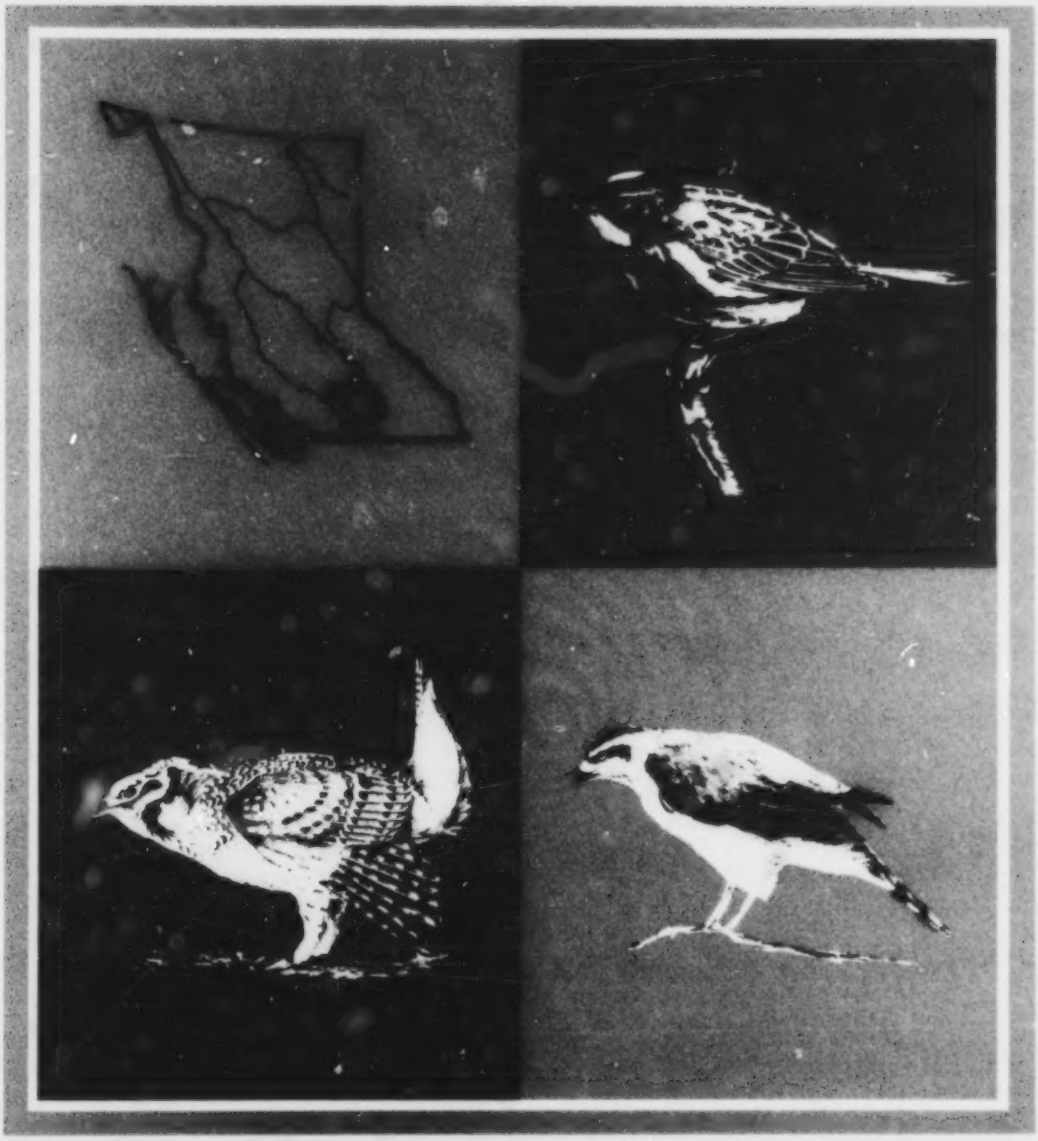
WILDLIFE HABITAT Handbook

for the Southern Interior Ecoprovince



Vol. 2 Guidelines for Selected Birds

BC

Ministry of Environment

Ministry of Forests

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WILDLIFE HABITAT HANDBOOKS FOR THE SOUTHERN INTERIOR ECOPROVINCE

VOLUME 2: SPECIES NOTES FOR SELECTED BIRDS

R. Wayne Campbell
Kenneth H. Morgan
and
Calvor Palmateer

A cooperative effort of the
Ministry of Environment (Wildlife Branch),
the Ministry of Forests (Research Branch),
and Wildlife Habitat Canada

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Technical Editor
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Victoria, B.C.

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PREFACE

This publication is part of the series "Wildlife Habitat Handbooks of the Southern Interior Ecoprovince". The purpose of this series is to provide forest, wildlife, and range managers with the knowledge and tools to assess impacts of various land management practices on wildlife and its habitat. Basic to this assessment process is an understanding of wildlife's relationship to habitat.

The information in this series applies specifically to the Southern Interior Ecoprovince and similar ecosystems in the southern area of British Columbia. The principles and processes described, however, apply generally to all managed forests and rangelands, when the welfare of wildlife is affected by land management decisions.

The series is a comprehensive package composed of eleven separate volumes. Although each part will be an independent treatment of a specific subject, when combined in sequence, the individual parts will be as chapters in a book. The final sequence is shown on the inside back cover of this publication, but individual chapters will be printed as they become available. Though this ensures that the information will be used as quickly as possible, the order of production will not be the same as the final organized order.

"Wildlife Habitat Handbooks of the Southern Interior Ecoprovince" is a cooperative effort of the British Columbia Ministries of Environment (Wildlife Branch, Fisheries Branch), the Ministry of Forests (Research Branch), the Ministry of Municipal Affairs, Recreation, and Culture (Royal British Columbia Museum), the University of British Columbia and Simon Fraser University, and the Canadian Wildlife Service.

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Ken Morgan and Calvor Palmateer drafted the species notes. Wayne Campbell carried out a detailed technical edit and, with the technical editor, rewrote and modified the notes for consistency among themselves and with the other volumes. Wayne also ensured that the distribution maps accurately portrayed our present knowledge. Additional technical review was ably provided by Ralph Ritcey and Rick Howie.

The authors would like to thank Lynne Foxall for her long-suffering patience in typing this document. Spenser Sutton of Atlas Designworks prepared the distribution maps and overall note design. All bird illustrations were pain-stakingly prepared by Michael Hames. Tracy Hooper and Elizabeth Stanlake spent long hours editing and preparing this manuscript for publication. Cover design was by Nicholas Newbeck. Other graphics were prepared by Gail Harcombe and Glenn Kubian.

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1 Introduction

1. INTRODUCTION

The major wildlife goal in British Columbia is to maintain the diversity of species. This is a difficult goal to achieve with the large number of species, habitats, and land use activities. For most species, the desired information for management is scanty, scattered, and descriptive. Thus it is difficult to predict outcomes of land use practices on habitat and on wildlife, especially with few staff, low budgets, and high rates of habitat change.

The wildlife habitat handbook project was initiated to develop planning tools to aid wildlife habitat managers in predicting consequences of management activities on habitat and therefore on wildlife. Two major premises of this handbook are:

1) most wildlife habitat will be managed indirectly by influencing other resource managers to modify their activities for the benefit of wildlife;
2) all wildlife species and their habitat requirements must be considered in the process.

This handbook system organizes biological data for various ecosystems or habitats, in a framework that assists resource managers in predicting consequences and in developing alternatives. It is based on similar approaches to species diversity management in the United States. Our approach was to begin with a pilot study in the Southern Interior Ecoprovince (see Figures 1 and 2).

The following report is the "bird" component of the information base we call species notes [1]. These notes present knowledge of habitat requirements for terrestrial vertebrates in a readable, understandable format. They summarize the literature describing the distribution, habitat requirements, and selected life history characteristics, from a *provincial* perspective, for selected bird species occurring in the Southern Interior Ecoprovince. This selection was necessary because a complete coverage of the approximately 310 known species would have been too costly and time consuming at this time. Regional wildlife biologists did the selection based on their need for more information on certain species or for species of management importance.

Appendix 5.1 provides a phylogenetic listing of these species. The notes provide the literature database for developing the species-habitat relationship models that will indicate suitability values for selected wildlife species for each major wildlife habitat.

The species notes were compiled with an emphasis on information specific to British Columbia. The main source of information was the literature collected at the Royal British Columbia Museum (Campbell *et al.* 1979, 1988) for the bird bibliographies and Bird Atlas Projects (in prep.). An extensive search of the information collected by the museum up to September 1984 was conducted. Since many species are not adequately covered in British Columbian studies, we used information from general bird texts along with other literature relevant to the Pacific Northwest. Some general texts are listed in Appendix 5.2. Additional information was provided by various biologists who reviewed notes on species within their area of expertise.

The species notes are starting points for information on the habitat requirements of these birds in British Columbia. For some species little information is currently available, as noted in regional wildlife planning documents. Information from future studies and field work can be incorporated into the wildlife habitat handbooks to update and refine existing knowledge.

1.1 Annotated Format of Species Notes

All species notes follow the same format, with information arranged under the following categories:

Taxonomy: each species note is headed by the common name, scientific name and taxonomic code, taken from Campbell and Harcombe (1985).

Synonyms: common names are also given and follow pre-1983 American Ornithological Union standards, since these references may be used for species identification or additional biological information.

Distribution, Seasonality and Abundance: a summary statement of abundance and provincial distribution. Abundance is assessed within suitable habitat and rated subjectively (see Table 1).

Habitat Requirements: divided by three main life requisites:

- **Reproduction:** includes information on courtship areas and reproductive sites (nesting).
- **Feeding:** includes information on food habits, foraging substrates, and foraging cover.
- **Special Needs:** includes information on roosting/resting sites and sites utilized during migration.

Within each of these broad categories, habitat requirements are subdivided into habitat classes and specific habitat elements.

[1] Also called species narratives or species profiles in other reports

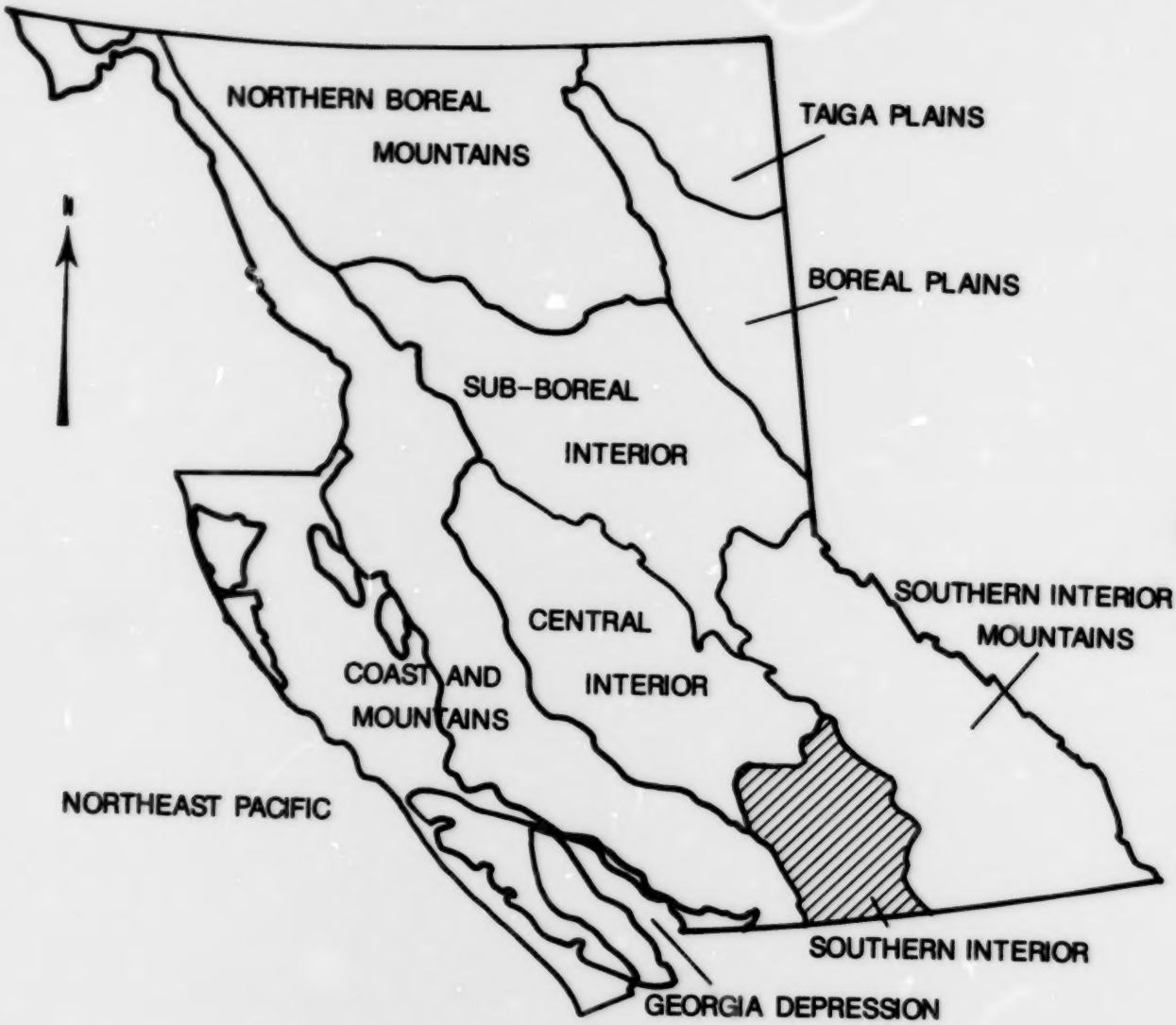


Figure 1. Location of the Southern Interior Ecoprovince.

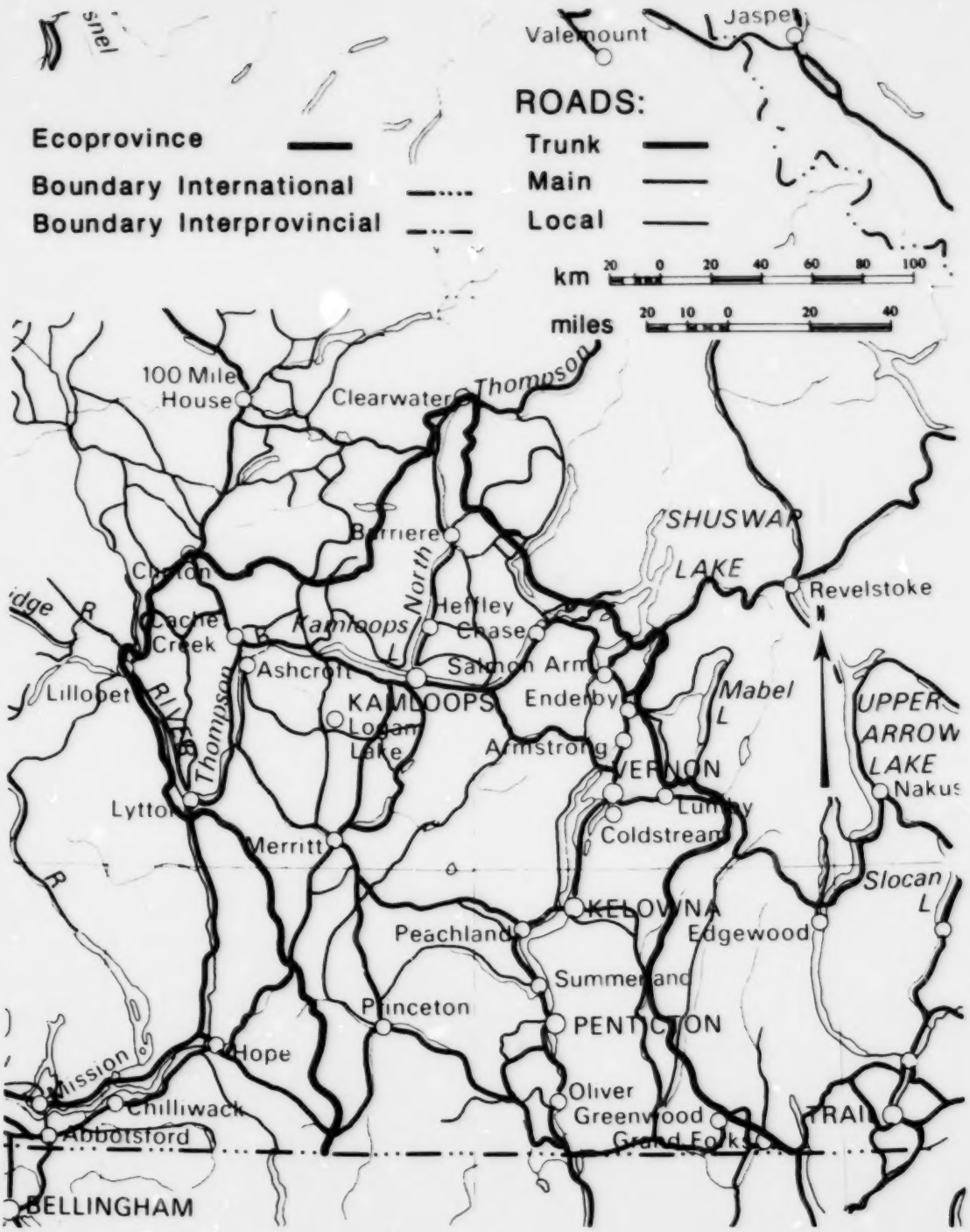


Figure 2. The Southern Interior Ecoprovince.

Habitat Classes: in some cases, information from the literature allowed only general habitat classes to be used whereas more detailed habitats could be described for other species that have been studied extensively (Harcombe and Lea in prep.)

Specific Habitat Elements: site-specific factors that enhance a habitat class for use by a particular species. Includes information on food habits and other details such as a requirement for tree cavities for nesting, or a well-drained soil for burrowing.

Habitat Requirements - Pattern: when necessary, this section is used to describe the relationship between the various habitat requirements when more than one habitat is required. For example, a species may forage in lowland wet meadows but require nearby shrub cover for nesting.

Territory/Home Range: includes information on territory and home range sizes. Territory is defined as part of the home range defended against other species or members of the same species. Home range is the area covered by an individual animal carrying out its life requisites.

Activity and Movement Patterns: includes daily and seasonal activity patterns, migration, and juvenile dispersal.

Status: includes a designation (not in jeopardy, special, threatened, endangered, or indeterminate) based on Munro and Low (1979), and a legal status. If no legal status is mentioned, the species is not protected by current laws.

Other: miscellaneous comments relating to niche, relationships to other vertebrates, specific management recommendations, etc.

Selected References: a short list of references, for additional or more detailed information.

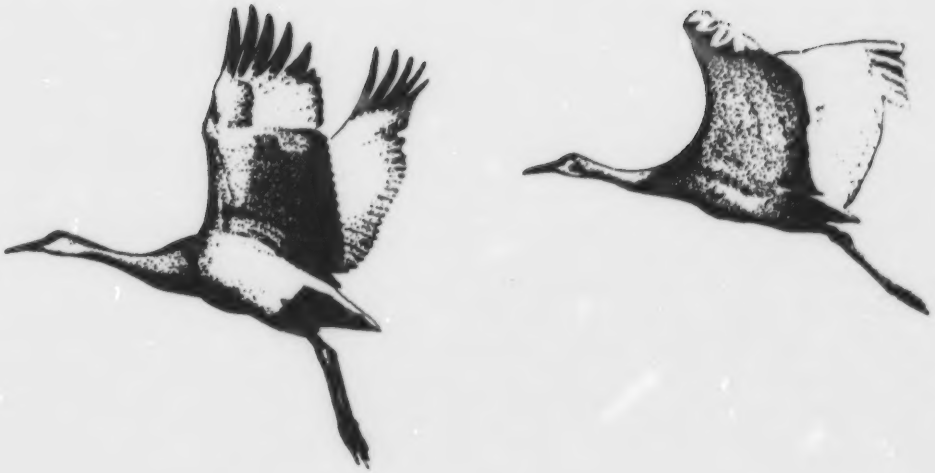
Distribution Maps: accompany each species note and show the approximate provincial distribution. Maps were based primarily on nest record data on file at the Royal British Columbia Museum. These known data are extrapolated into likely areas of breeding and other expected non-breeding occurrence.

Finally, a glossary (Appendix 5.3) is provided to define some of the terms used in the bird species notes.

Table 1. Abundance classes for birds

ABUNDANCE	CODE	DEFINITION
Very abundant	VA	Over 1000 individuals per day per locality (often in large flocks)
Abundant	A	200 to 1000 individuals per day per locality
Very Common	VC	50 to 200 individuals per day per locality
Common	C	20 to 50 individuals per day per locality
Fairly Common	FC	7 to 20 individuals per day per locality
Uncommon	U	1 to 6 individuals per day per locality
Scarce	S	1 to 6 individuals per season
Very Scarce	VS	Over 6 records, but of very infrequent occurrence
Casual	CA	2 to 6 records (all time)
Accidental	ACC	Only 1 record (all time)
Hypothetical	HYP	Sight record (specimen, photograph, recorded song or acceptable written field description lacking) probably correctly identified.

2
Species Notes



Pied-billed Grebe
PBGR
Podilymbus podiceps (Linnaeus)

Distribution, Seasonality and Abundance

Summer visitant north to 58N, including the Queen Charlotte Islands. Breeds in southcentral (south of 53N), southwestern, and Peace River areas of the province, from sea level to 1250 m. Winters commonly in coastal southwestern areas; rarely in the Okanagan Valley.

Habitat Requirements - Reproduction

HABITAT CLASSES: Breeds in fresh emergent wetlands, ponds, and lacustrine habitats, preferably with areas of sparse to moderate emergent vegetation; a few breeding in riverine habitats and man-influenced habitats such as sewage ponds. Nests are found among stands of emergent vegetation such as bulrushes and are usually located in small, sparsely vegetated areas within denser emergent growth near open water.

SPECIFIC HABITAT ELEMENTS: Nests are floating wet masses of decayed aquatic vegetation including bulrushes, sedges, common cattail, aquatic mosses, and yellow waterlily. Nests are found between 3 and 20 m from shore, and in water up to 2 m deep.

Habitat Requirements - Feeding

HABITAT CLASSES: Dives for small aquatic vertebrates and invertebrates but also eats some seeds and vegetation. In summer, feeds in fresh emergent wetlands, ponds. and lacustrine habitat with suitable water depth for diving; in winter, feeds in more open aquatic areas such as marine, estuarine, and large lacustrine habitats.

SPECIFIC HABITAT ELEMENTS: In summer, feeds on animal matter such as small fish, crustaceans, worms, leeches, and insects. Occasionally, molluscs, frogs, salamanders, seeds and soft parts of aquatic plants are eaten. In winter, feeds on crustaceans and small fish.

Habitat Requirements - Pattern

Semi-open water with areas of emergent vegetation in summer, open water in winter, both with sufficient depth to allow diving for feeding and escape cover.

Activity and Movement Patterns

Diurnal. Spring migrants arrive on Interior lakes in late March and April. Autumn movement commences in late August and early September. Usually solitary.

Territory/Home Range

Solitary nester on aquatic habitats from less than 1 ha in size. Known to defend area within 50 m of nest.

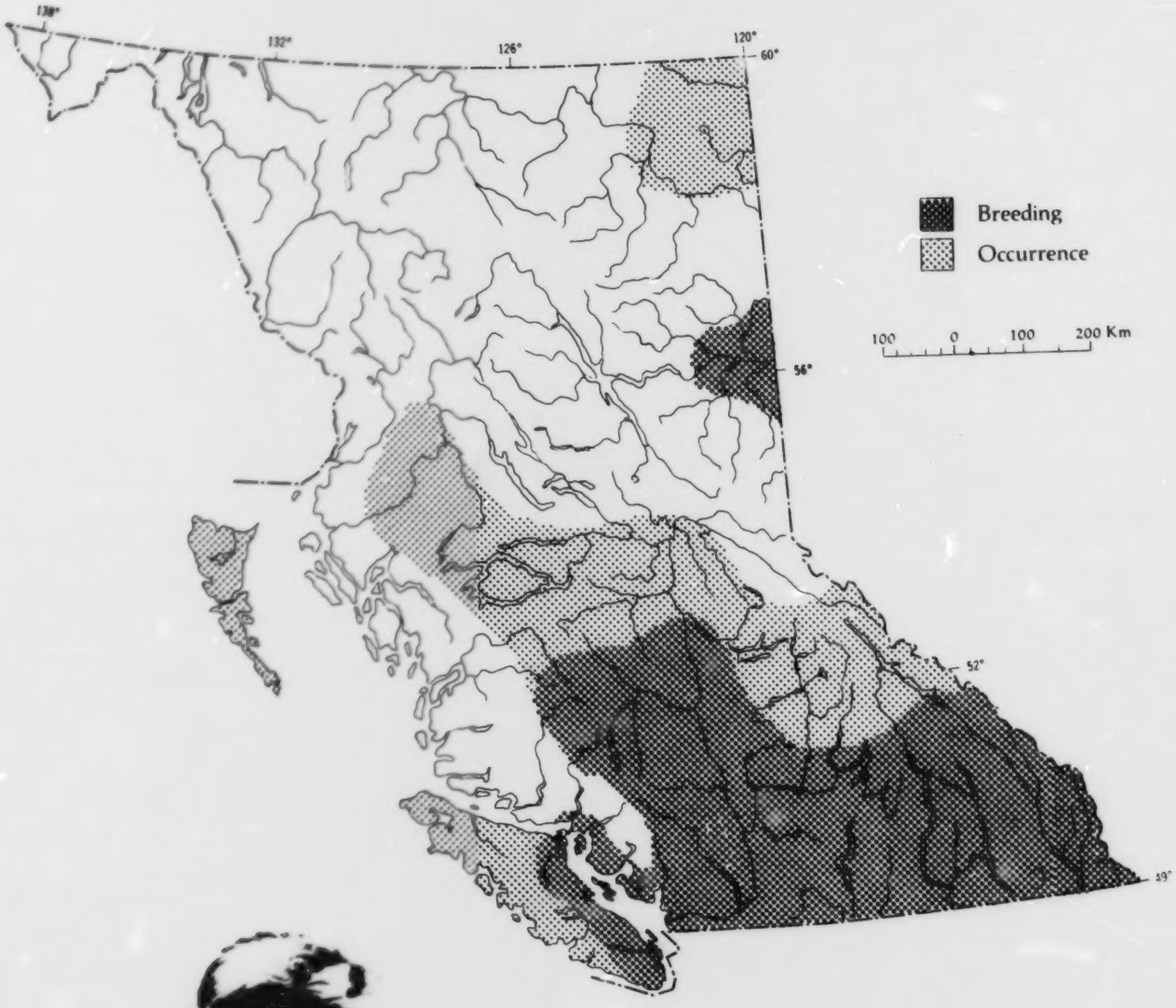
Status

Not in jeopardy. Migratory nongame bird. Protected by the Migratory Birds Convention Act (1917) and the British Columbia Wildlife Act (1982).

Selected References

Kirby 1976; Palmer 1961.

Pied-billed Grebe



Great Blue Heron
GBHE
Ardea herodias Linnaeus

Distribution, Seasonality and Abundance

Breeds commonly in the lower Fraser Valley, along the coast of southeast Vancouver Island, and southern Gulf Islands. Isolated small heronries also occur in the Prince Rupert area and the Queen Charlotte Islands. Breeds less commonly in the Interior, usually locally, in the Kootenay, Columbia, and north Okanagan valleys and along the North and South Thompson and Nicola Rivers. During milder winters, a few may winter in the Interior but most disperse to the coast.

Habitat Requirements - Reproduction

HABITAT CLASSES: Nests in colonies in mature forests near palustrine, aquatic, or man-influenced habitats from sea level to 1000 m.

SPECIFIC HABITAT ELEMENTS: On the coast, most nest trees were red alder with Douglas-fir being the most frequently used conifer. In the Interior, most nest trees were black cottonwood. Other species used were bigleaf maple, arbutus, western hemlock, western redcedar and Sitka spruce on the coast and trembling aspen, western white pine, and ponderosa pine in the Interior. Dead trees are rarely used as nest sites. Optimum nest height was found to be 17-30 m (range of 7-70 m). Heronries occupy up to 2 ha of forest and 1 to 39 nests may be situated in a single tree (Forbes *et al.* 1985).

Habitat Requirements - Feeding

HABITAT CLASSES: Forages in fresh emergent wetlands, ponds, saline emergent wetlands, and estuarine, slow permanent riverine, and lacustrine habitats; may use man-influenced habitats, such as cultivated fields, pastures, hatcheries, and urban-residential fish ponds.

SPECIFIC HABITAT ELEMENTS: Forages by stalking and grabbing animal prey, such as marine and freshwater fishes, small field mammals, reptiles and amphibians, crustaceans, nerid worms, and occasionally birds. Small amounts of vegetable matter are sometimes eaten.

Habitat Requirements - Pattern

Mature large trees near open water or marshy areas.

Territory/Home Range

Breeding territory restricted to nest site. Feeding territories are defended in non-breeding season. May travel as far as 16 km from nest sites to foraging areas (Krebs 1974). If undisturbed, colonies can remain active for decades.

Activity and Movement Patterns

Forages day and night (in lighted areas). In the Interior, spring migrants return to colonies in March and April; most depart to the coast during August and September. Coastal birds are resident.

Status

Sensitive. Migratory nongame bird. Protected by the Migratory Birds Convention Act (1917) and the British Columbia Wildlife Act (1982).

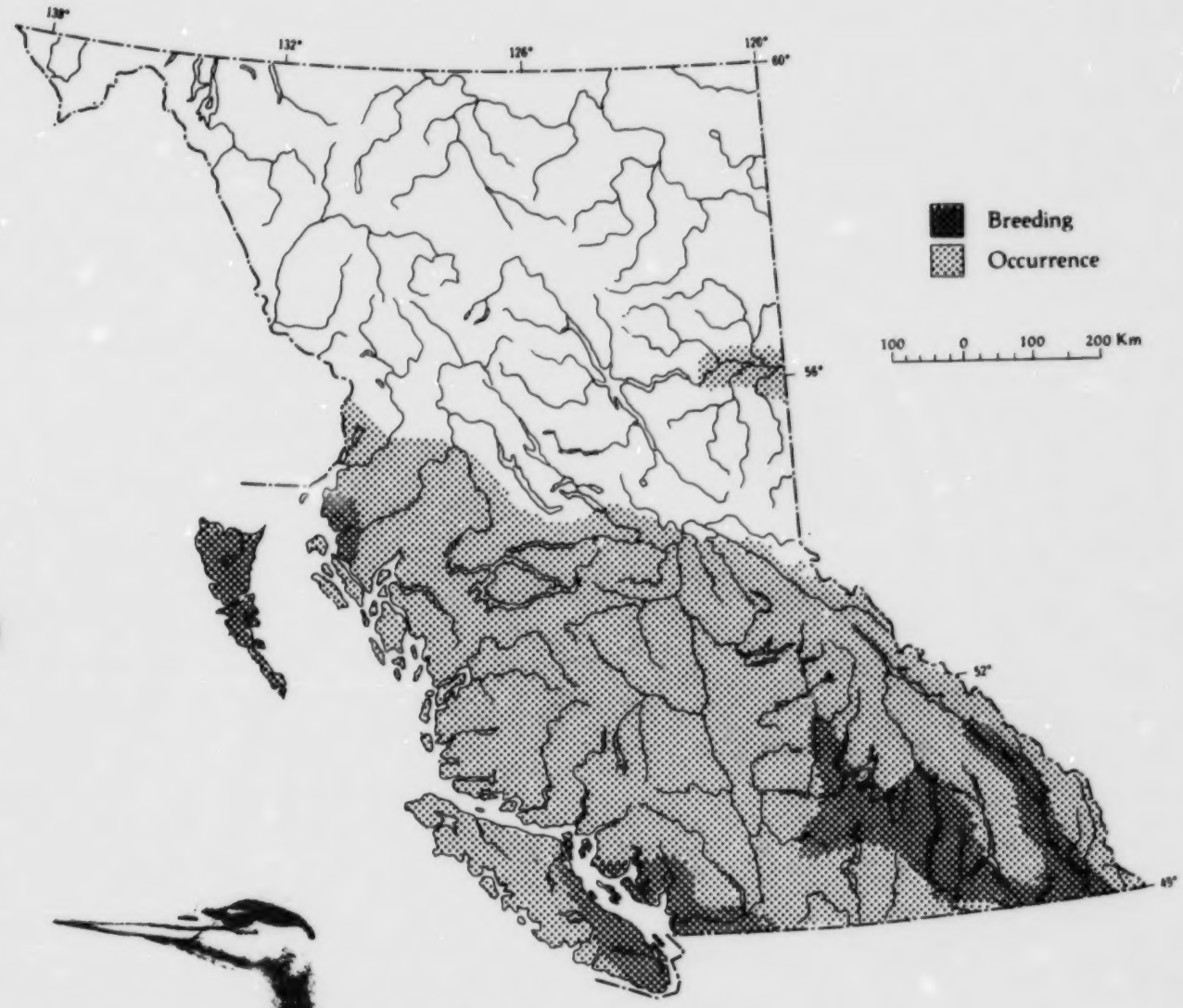
Other

Needs nesting sites undisturbed by human activity, with protection from prevailing winds. Land clearing, construction, and observer disturbance caused 17 out of 27 abandonments of heronries in British Columbia (Forbes *et al.* 1985)

Selected References

Forbes *et al.* 1985; Krebs 1974; Paine 1972.

Great Blue Heron



Wood Duck
WODU
Aix sponsa (Linnaeus)

Distribution, Seasonality and Abundance

Summer visitant and breeder in the Kootenays and the Okanagan Valley north to Williams Lake and west to the Chilcotin. Resident and breeds in the Lower Mainland and on the east side of Vancouver Island. Introduced in the Queen Charlotte Islands.

Habitat Requirements - Reproduction

HABITAT CLASSES: Breeds in mature upland forested and man-influenced habitats near ponds, slow permanent riverine or lacustrine habitats.

SPECIFIC HABITAT ELEMENTS: Nests in natural and animal-produced tree cavities; cannot excavate own nest site. Readily uses nest boxes. Nest sites were located in mature black cottonwood, bigleaf maple, and trembling aspen. Nest sites ranged up to 25 m from the ground, with optimum range from 6-15 m (McGilvery 1968). Minimum d.b.h. of the nest tree is about 50 cm (Thomas 1979).

Habitat Requirements - Feeding

HABITAT CLASSES: Forages in palustrine and aquatic habitats with shallow quiet water and on associated shorelines. Preference for water with floating vegetation. May occasionally forage in cultivated fields and pastures.

SPECIFIC HABITAT ELEMENTS: Forages by surface and subsurface feeding. Eats seeds and vegetative parts of aquatic plants, seeds of trees and shrubs, aquatic and land insects, and crustaceans. Also eats cultivated grains. Ducklings consume mainly insects, changing to a vegetative diet as they mature.

Habitat Requirements - Pattern

Slow moving or stagnant water in or near deciduous or mixed woodland consisting of mature trees with cavities or nest boxes; prefers clear, unobstructed view of water from cavity.

Activity and Movement Patterns

In the Interior, spring migration occurs in April; autumn migration occurs in late September and early October. A few birds will winter in the south Okanagan Valley, while coastal birds are resident.

Territory/Home Range

Does not defend nest cavity. In Minnesota, the home range of breeding males averaged 200 ha and of unpaired males 525 ha (Gilmer 1971).

Status

Not in jeopardy. Migratory game bird. Protected by the Migratory Birds Convention Act (1917) and the British Columbia Wildlife Act (1982).

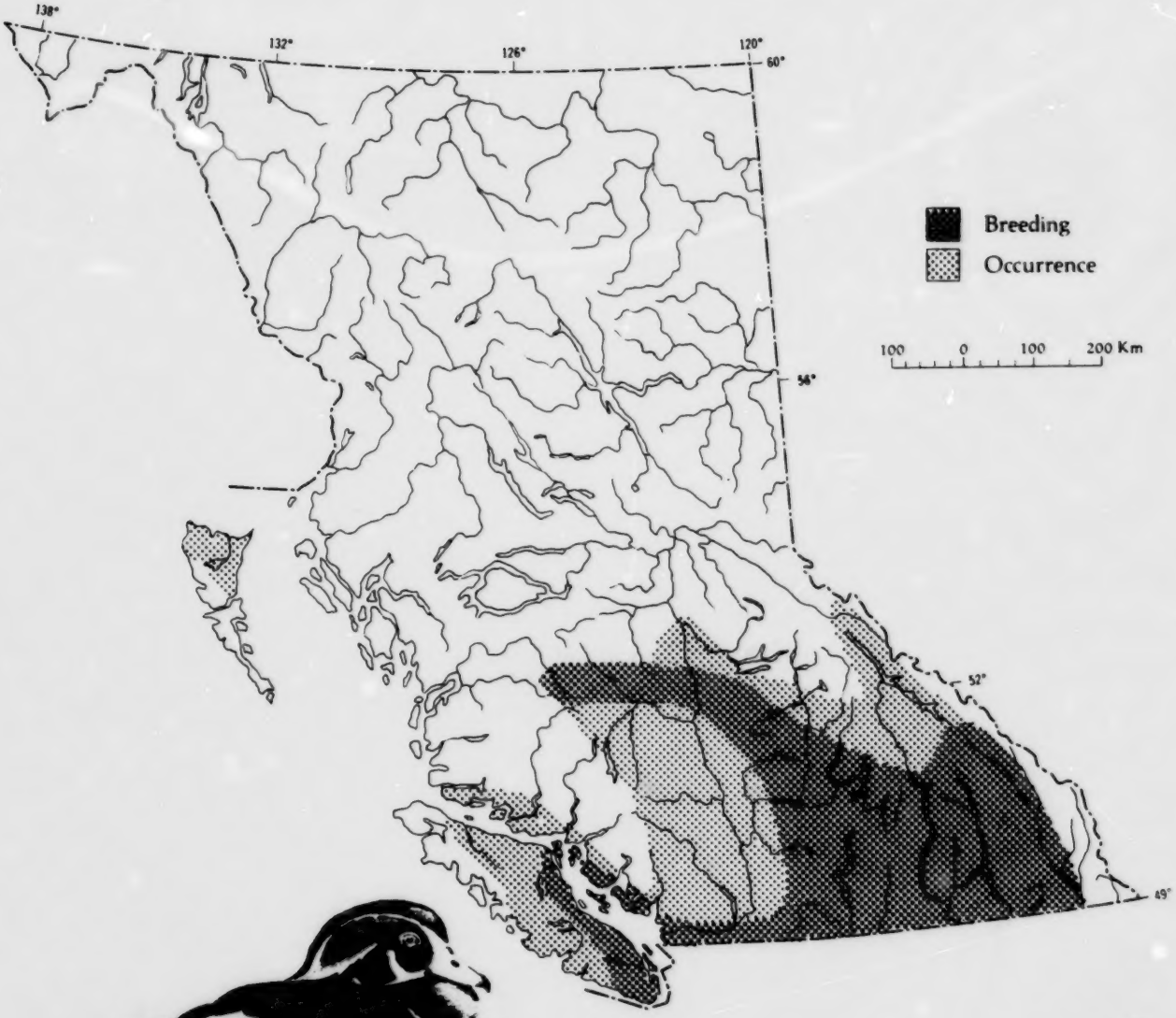
Other

A lack of cavities of the correct size is limiting; the erection of nest boxes does result in sustaining populations locally.

Selected References

Jackman and Scott 1975; Bellrose 1976; Trefethen 1966.

Wood Duck


138°
132°
126°
120°
60°
56°
52°
49°
Breeding
Occurrence
100 0 100 200 Km

Barrows Goldeneye
BAGO
Bucephala islandica (Gmelin)

Distribution, Seasonality and Abundance

Breeds commonly throughout the Interior, rarely near the coast. Common winter visitant along the coast; far less common in the southern Interior.

Habitat Requirements - Reproduction

HABITAT CLASSES: Breeds in a variety of forested and semi-forested upland and man-influenced habitats associated with ponds or lacustrine habitats; in southern areas, prefers deciduous-dominated woodlands. Breeds from 300-1500 m.

SPECIFIC HABITAT ELEMENTS: Nests in natural, animal-produced, and man-made cavities; cannot excavate own nest cavity. Uses mainly cavities in living and dead coniferous trees (e.g. Douglas-fir, ponderosa pine, lodgepole pine, and spruces) and deciduous trees (e.g. black cottonwood, trembling aspen). When available, nest boxes are readily used. Chooses nest cavities 1-20 m above the ground, most less than 5 m in height. Minimum d.b.h. of nesting tree is about 60 cm (Thomas 1979).

Habitat Requirements - Feeding

HABITAT CLASSES: Forages in ponds, lacustrine, riverine, marine and estuarine habitats.

SPECIFIC HABITAT CLASSES: Forages by diving in water less than 5 m in depth. Eats primarily animal matter with some vegetable matter. In summer, crayfish, pondweeds, aquatic insects, amphipods and molluscs are eaten; ducklings feed primarily on insects. In winter, along the coast, molluscs, crustaceans, isopods, fish, sea urchins, starfish, marine worms, and hydroids form the diet. Salmon eggs may be eaten on coastal rivers and lakes (Munro 1923b).

Habitat Requirements - Special Needs

SPECIFIC HABITAT ELEMENTS: Require overhanging shoreline vegetation or emergents suitable for escape/hiding cover for ducklings. Maintenance sites, such as fallen logs in water, rocks, or small mats of emergent vegetation, are important.

Habitat Requirements - Pattern

Trees with suitable cavities or nest boxes usually within several hundred metres of a water body. A lack of nesting cavities may limit numbers but Munro (1939) suggested that adequate food supply was of greater importance than availability of nest sites in determining favoured breeding areas.

Activity and Movement Patterns

Spring migrants arrive in the Interior from February to April. After mating, males disperse to unknown places to moult in May and June, while females are incubating. Fall movement to coast commences in late August and carries through October.

Territory/Home Range

Water area closest to the nest site is defended. Water bodies smaller than about 1 ha are usually not occupied (M.F. Jackson, pers. comm.). The area encompassed by the home range depends upon the size and shape of the water body.

Status

Not in jeopardy. Migratory game bird. Protected by the Migratory Birds Convention Act (1917) and the British Columbia Wildlife Act (1982).

Selected References

Bellrose 1976; Munro 1939.

Barrow's Goldeneye

Osprey
OSPR
Pandion haliaetus (Linnaeus)

Distribution, Seasonality and Abundance

Uncommon breeder throughout the province, generally south of 56N, except the Queen Charlotte Islands. Also occurs rarely north of this area as a straggler and local breeder. Casual in winter in milder, southern areas of British Columbia.

Habitat Requirements - Reproduction

HABITAT CLASSES: Breeds in open forested and man-influenced habitats near marine, estuarine, slow permanent riverine, and lacustrine habitats.

SPECIFIC HABITAT ELEMENTS: Nests are characteristically built in the tops of dead and living coniferous and deciduous trees; may utilize man-made structures such as power poles, cranes, towers, artificial nest platforms, micro-dishes, cables over rivers, and buildings. Heights of nests ranged from 1-60 m with most averaging 9 to 20 m. Commonly, nests are built over water.

Habitat Requirements - Feeding

HABITAT CLASSES: Forages over open aquatic habitats.

SPECIFIC HABITAT ELEMENTS: Forages by flying, hovering, and diving into water after a variety of fish. Carnivorous. Fishes are caught within approximately 1 m of the water's surface (Beebe 1974).

Habitat Requirements - Pattern

Mature, tall trees or man-made structures suitable for nesting near large foraging areas of open water.

Territory/Home Range

Pairs may return to the same nest site over many years. Hunts up to 9.6 km from nest (Garber 1972). In the Kootenays nests are 1 to 2 km apart but has nested 60-70 m apart in optimum areas near Creston.

Activity and Movement Patterns

Diurnal. Migratory; most arrive in March and April and leave in September.

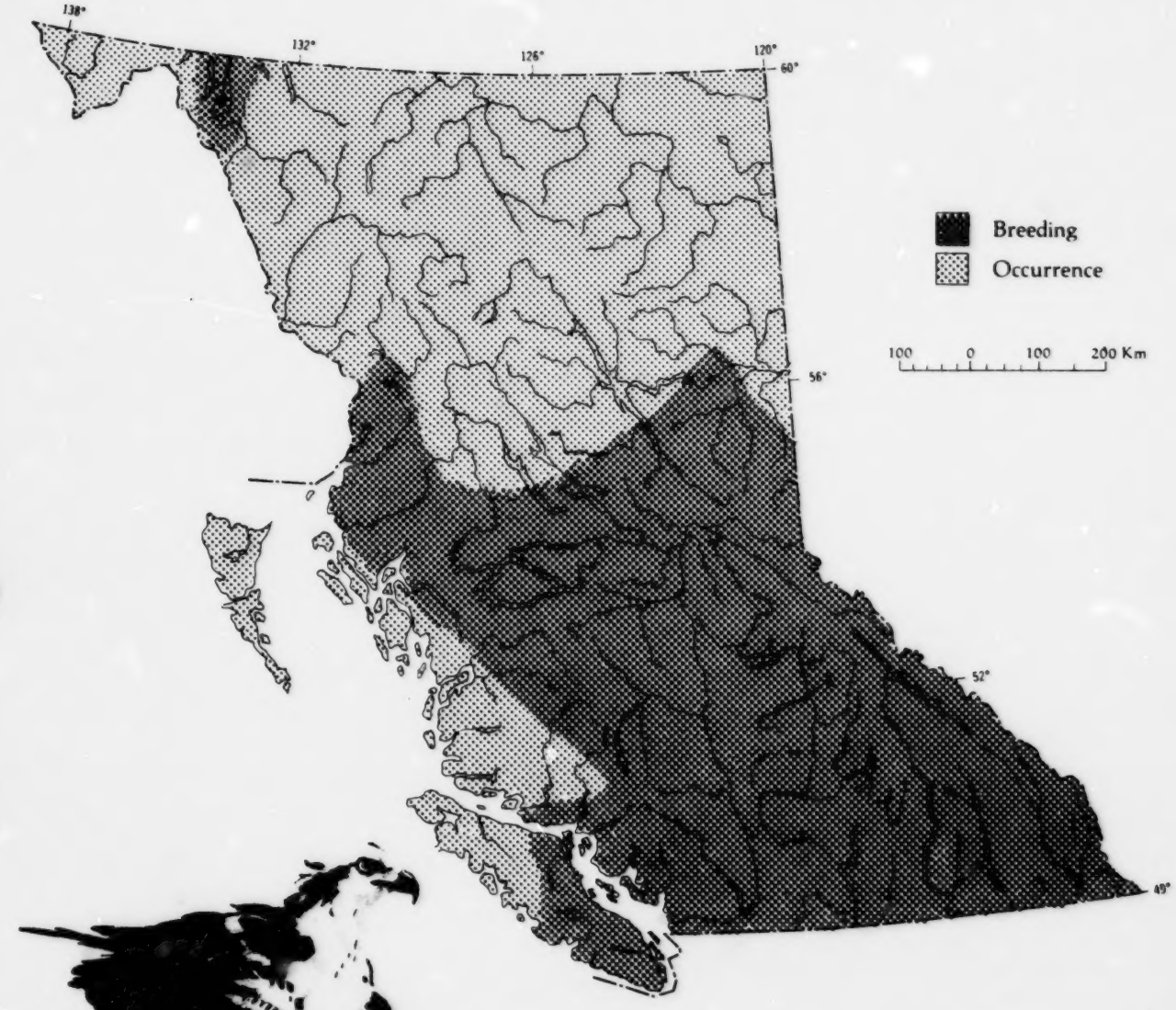
Status

Not in jeopardy. Raptor. Protected by the British Columbia Wildlife Act (1982).

Selected References

Beebe 1974; Flook and Forbes 1983; Henney 1973; Koplin 1971; Olendorff and Olendorff 1968; Zarn 1974a.

Osprey


138°
132°
126°
120°
60°
56°
52°
49°
Breeding
Occurrence
100 0 100 200 Km

Northern Goshawk
NOGO
Accipiter gentilis (Linnaeus) [Goshawk]

Distribution, Seasonality and Abundance

Uncommon resident and breeder throughout the province, with species more common in the north of its range.

Habitat Requirements - Reproduction

HABITAT CLASSES: Breeds in dense mature coniferous or mixed forested habitats usually 10-450 m away from quietly flowing water (Shuster 1980) and between 700 and 1400 m elevation. In Oregon, nests in 150-year-old conifer stands, with a coniferous understory, in the coastal wet belt (Reynolds 1983) and in Colorado, nests in dense stands of mature aspens, with no understory (Shuster 1980).

SPECIFIC HABITAT ELEMENTS: Nests are built in a crotch or on a limb of a live mature tree, generally below a high forest canopy. In British Columbia, both deciduous (trembling aspen and black cottonwood) and coniferous (Douglas-fir, spruces, and pines) trees were chosen for nesting. Nest sites were on north to east slopes in the northwestern United States (Shuster 1980; Reynolds 1983) but were on southerly aspects in Alaska (McGowan 1975). Nest heights ranged from 7 to 18 m from the ground.

Habitat Requirements - Feeding

HABITAT CLASSES: Forages in forested and forest edge habitats.

SPECIFIC HABITAT ELEMENTS: Carnivorous. Searches for and pounces on birds or strikes birds in the air. Females generally attack larger prey (up to 1158 g) than males. Prey includes small to medium sized birds, including pheasants, grouse, quail, doves, partridges, ducks, and passerines. Small mammals, such as squirrels, are occasionally taken.

Territory/Home Range

Nesting territories have been estimated to be 5 to 10 ha (Reynolds 1983; Bartlet 1974). Pairs show site fidelity and may occupy a single nest for more than 5 years. Home (hunting) ranges have been estimated to be 212 ha (Craighead and Craighead 1956), 1979 ha (Eng and Gullion 1962), and 2463 ha (Reynolds 1979).

Activity and Movement Patterns

Diurnal. Mainly sedentary but a portion of the population (mainly immatures) move south or locally into valleys to winter. When prey populations in the north are low, birds may disperse en masse to southern areas.

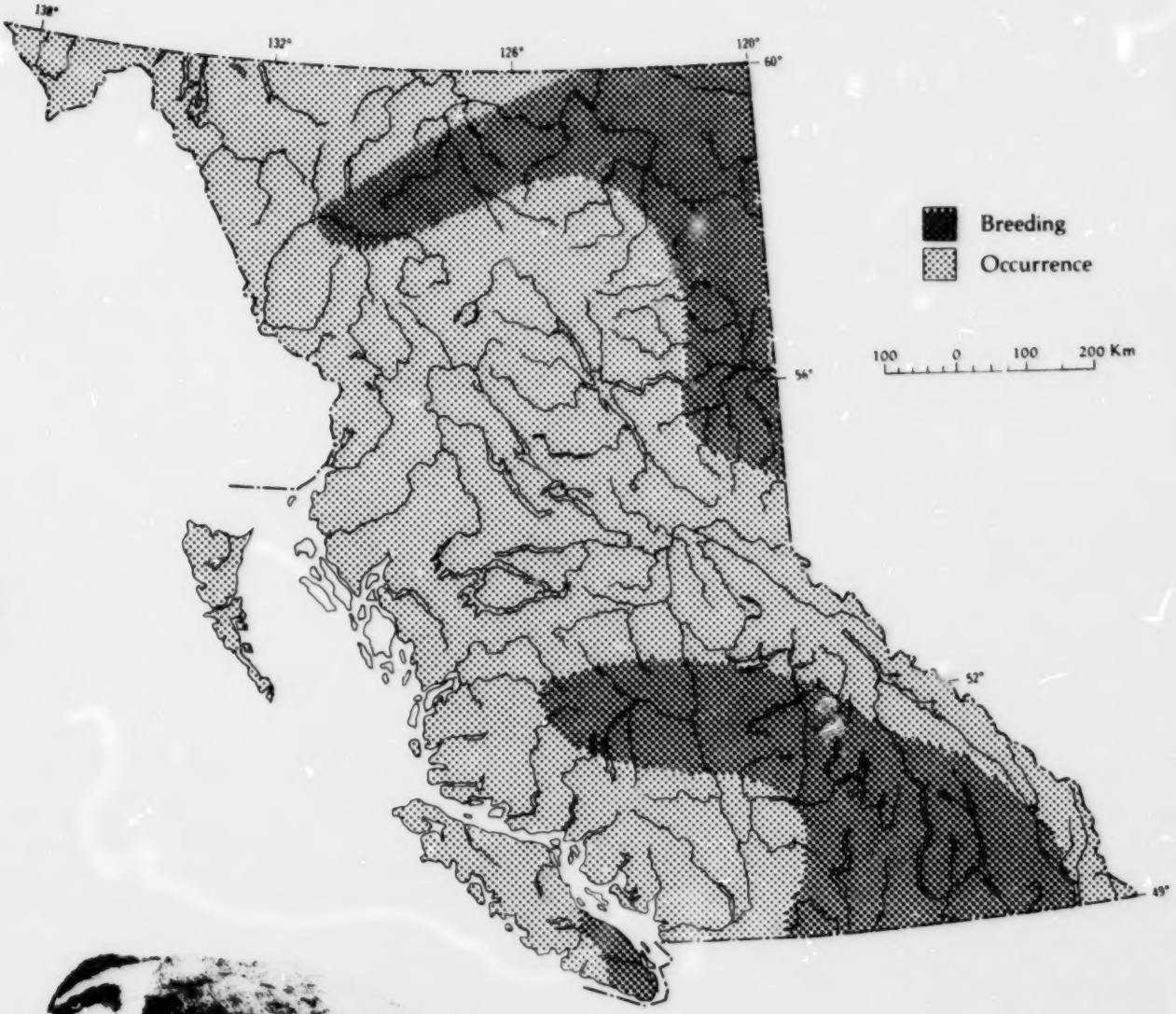
Status

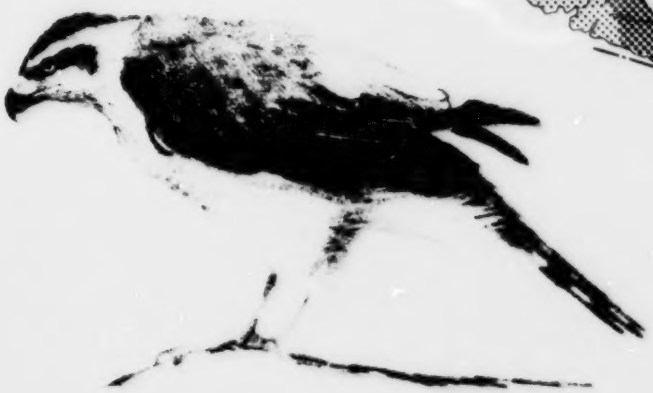
Not in jeopardy. Raptor. Protected by the British Columbia Wildlife Act (1982).

Selected References

Beebe 1974; McCowan 1975; Olendorff and Olendorff 1968; Reynolds 1983.

Northern Goshawk





Swainsons Hawk
SWHA
Buteo swainsoni Bonaparte

Distribution, Seasonality and Abundance

Rare to common breeder in the southern Interior in the Okanagan and Nicola Valleys. Very rare elsewhere. Accidental in winter.

Habitat Requirements - Reproduction

HABITAT CLASSES: Nests in open forest near treeless upland habitats such as sagebrush steppe, southern bunchgrass steppe, and man-influenced habitats such as cultivated fields and pastures. Nest sites range in elevation from 400-500 m.

SPECIFIC HABITAT ELEMENTS: In British Columbia nests were built in living trees with a preference for larger conifers such as ponderosa pine and Douglas-fir. Nests were between 5 and 25 m from the ground with the majority between 15 and 20 m.

Habitat Requirements - Feeding

HABITAT CLASSES: Forages over open country, such as sagebrush steppe, southern bunchgrass steppe, cultivated fields, pastures, and clearcuts.

SPECIFIC HABITAT ELEMENTS: Swoops from the air on its prey or walks over open habitat searching for and catching prey. Also hunts from a perch. Carnivorous. Preys on a wide variety of small animals including grasshoppers and crickets, pocket gophers and field mice, rabbits and ground squirrels. Grassland birds are also frequently eaten.

Habitat Requirements - Pattern

Large open areas (grassland, pastures, burns and clearcuts) associated with suitable nesting sites in forests.

Territory/Home Range

No information available.

Activity and Movement Patterns

Diurnal. Strongly migratory. Spring migration commences in late March and peaks in the first week of May. Fall migration mainly occurs from mid August to mid September.

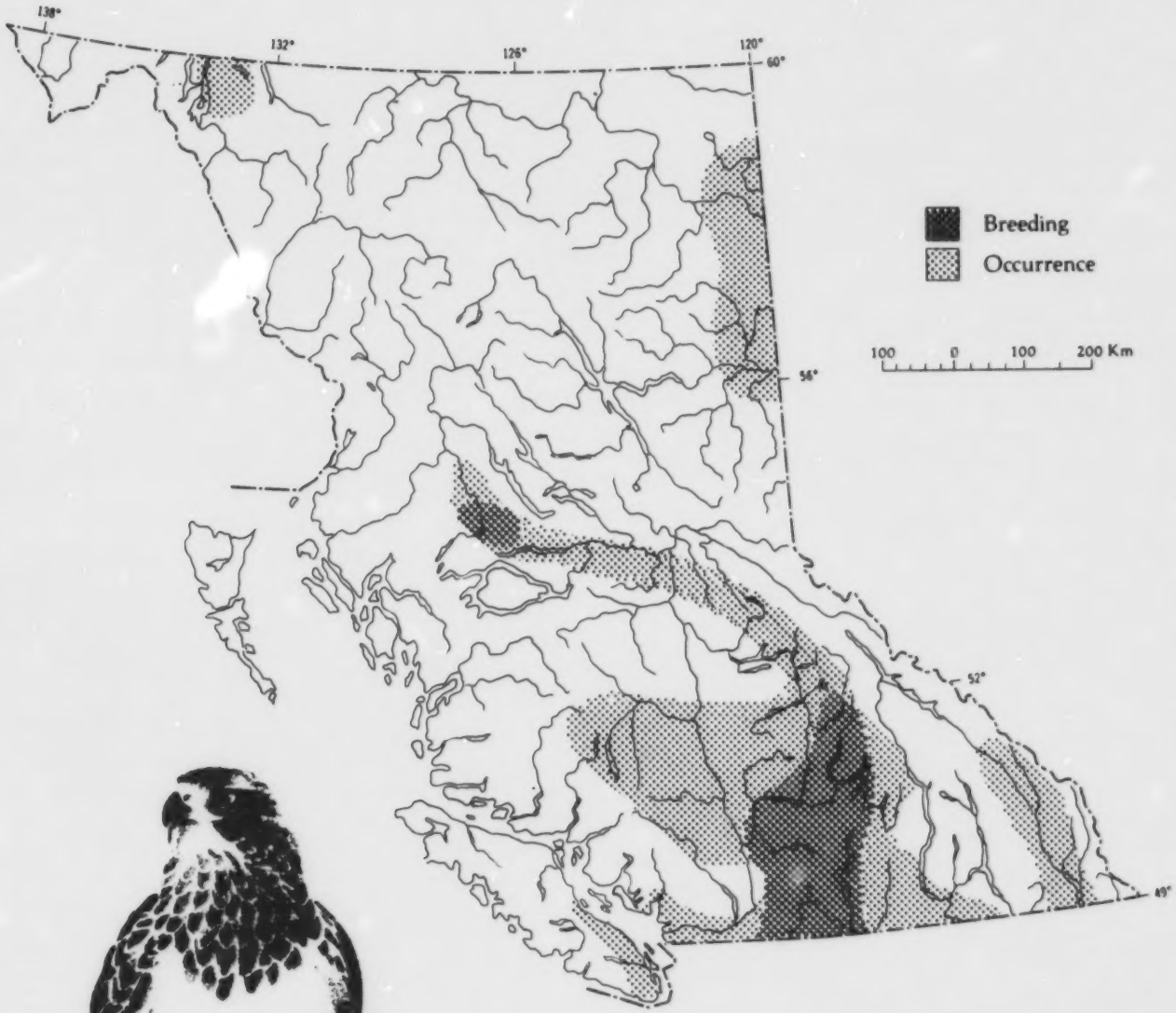
Status

Not in jeopardy. Raptor. Protected by the British Columbia Wildlife Act (1982).

Selected References

Beebe 1974; Olendorff 1972; Olendorff and Olendorff 1968; Schmutz *et al.* 1980.

Swainson's Hawk



Red-tailed Hawk
RTHA
Buteo jamaicensis (Gmelin)

Distribution, Seasonality and Abundance

Breeds throughout the province, being more common in southern areas. Resident in southwestern areas.

Habitat Requirements - Reproduction

HABITAT CLASSES: Breeds in wide variety of forested and man-influenced habitats between sea level and 2000 m elevation.

SPECIFIC HABITAT ELEMENTS: Nests are built in a variety of coniferous (e.g. ponderosa pine, western larch, Douglas-fir, Engelmann spruce, western hemlock, lodgepole pine, and white spruce) and deciduous (black cottonwood and trembling aspen) trees or on cliffs if trees are absent. Nests were between 5 m and 45 m above the ground with the majority between 7 m and 25 m.

Habitat Requirements - Feeding

HABITAT CLASSES: Forages over open or semi-open upland forest, man-influenced, and wetland habitats. Winter habitat is the same as that used in summer.

SPECIFIC HABITAT ELEMENTS: Searches for prey while flying or from perch sites, then pounces from above. Carnivorous. Preys primarily on small to medium sized mammals and birds. Occasionally takes reptiles, amphibians, and insects.

Habitat Requirement - Pattern

Large, mature tree suitable for nest site associated with habitats with sparse to moderate canopy closure.

Territory/Home Range

Frequently old nests are re-used. In Oregon nesting territories were 1.3 - 7.8 km^2 (Thomas 1979).

Activity and Movement Patterns

Diurnal. Migratory, except along the coast. Spring migrants return in late March or early April. Fall migration commences the last week of August through until October.

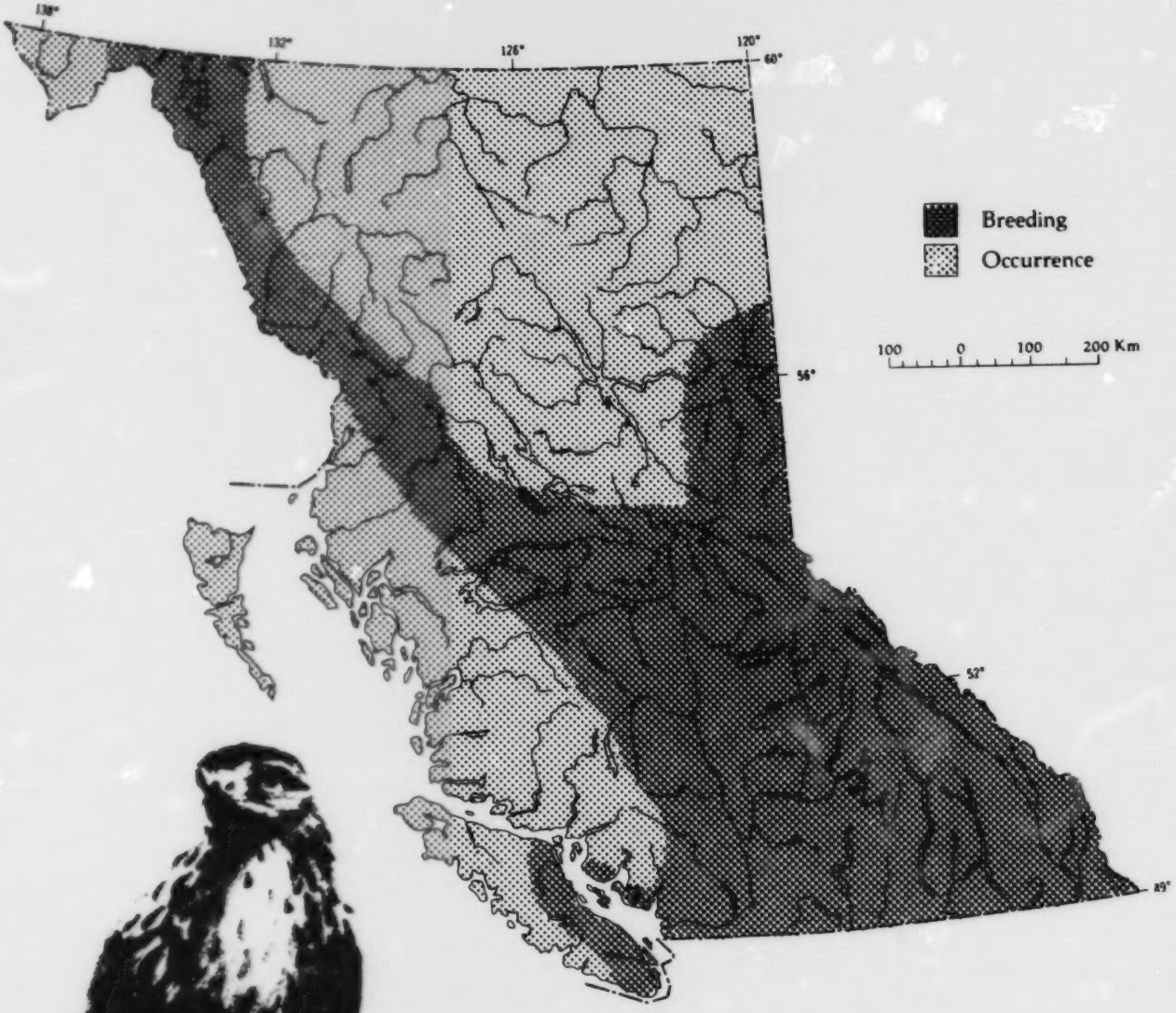
Status

Not in jeopardy. Raptor. Protected by the British Columbia Wildlife Act (1982).

Selected References

Beebe 1974; Fitch *et al.* 1946; Olendorff and Olendorff 1968.

Red-tailed Hawk



American Kestrel
AMKE
Falco sparverius Linnaeus
[Sparrow Hawk]

Distribution, Seasonality and Abundance

Common breeder in the Interior north to the Peace River. Uncommon on the coast. Occurs in summer on the outer mainland and Vancouver Island. Casual fall visitant on the Queen Charlotte Islands. Uncommonly winters on the southwest coast.

Habitat Requirements - Reproduction

HABITAT CLASSES: Breeds in open or semi-open upland and man-influenced habitats from sea level to 1650 m elevation.

SPECIFIC HABITAT ELEMENTS: Nest in natural, animal-produced and man-made cavities. Cannot excavate own nest site. Nests in living trees (e.g. ponderosa pine, black cottonwood, Douglas-fir, trembling aspen, spruces, western hemlock, Garry oak, western redcedar, lodgepole pine, bigleaf maple, willows, and birches). May use cliffs, other bird nests, and man-made sites (e.g. nest boxes, buildings, fence posts, and power poles). Nest heights ranged between 1 and 30 m with most between 1 and 10 m. In Oregon, the minimum d.b.h. of nest trees was 30.5 cm (Thomas 1979).

Habitat Requirements - Feeding

HABITAT CLASSES: Forages over open non-forested upland and man-influenced habitats, and along the interface of forest and grassland.

SPECIFIC HABITAT ELEMENTS: Searches for prey from perches or while hovering then pounces on its prey on or slightly above the ground. Carnivorous. Prey includes small mammals (voles, mice, chipmunks, ground squirrels) and a wide variety of large insects, small birds, and occasionally reptiles.

Habitat Requirements - Special Needs

SPECIFIC HABITAT ELEMENTS: Requires perches from which to hunt and locate prey.

Territory/Home Range

In California, breeding territories averaged 111 ha (Balgooyen 1976). In Ohio, winter territories averaged 160 ha (Mills 1975).

Activity and Movement Patterns

Diurnal. Spring migrants arrive from late March to May; autumn migration commences in August, with the main movement occurring in September. Some winter in southern areas.

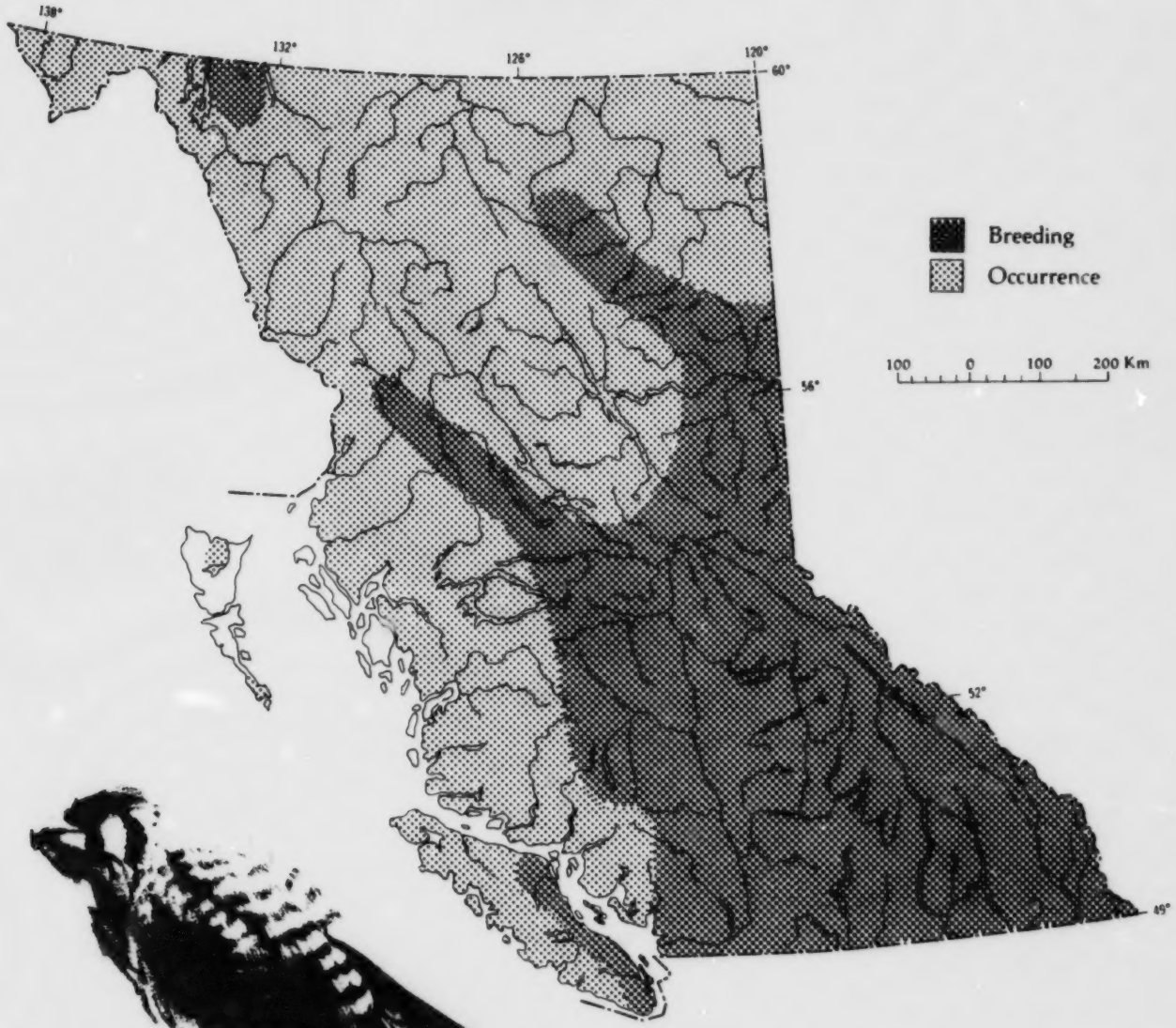
Status

Not in jeopardy. Raptor. Protected by the British Columbia Wildlife Act (1982).

Selected References

Balgooyen 1976; Beebe 1974; Olendorff and Olendorff 1968; Smith *et al.* 1972.

American Kestrel



Spruce Grouse
SPGR
Dendragapus canadensis (Linnaeus)

Distribution, Seasonality and Abundance

Common resident; breeds throughout British Columbia except the coastal mountains and islands.

Habitat Requirements - Reproduction

HABITAT CLASSES: Breeds in coniferous and mixed forested habitats. Will use forest edges, openings, older burns, and clearcuts. Nests were found from 400 to 2100 m with most records from 900 to 1830 m in elevation.

SPECIFIC HABITAT ELEMENTS: Nests are built on the ground, usually associated with understory shrubs.

Habitat Requirements - Feeding

HABITAT CLASSES: Forages in coniferous forested habitats and forest edges.

SPECIFIC HABITAT ELEMENTS: Browses and gleans vegetation, seeds, berries, and insects on ground and in trees. In Alberta, diet includes lodgepole pine needles and buds, mosses (spore capsules), horsetails (stems and tips), spruce (needles and buds), sedges (fruit), clasping twistedstalk (green fruit), black huckleberry (leaves, flowers, fruit) and lingonberry (fruit); juveniles eat mainly arthropods and berries (Pendergast and Boag 1971).

Territory/Home Range

In California, male territories were 4 - 4.9 ha (Thomas 1979).

Activity and Movement Patterns

Diurnal. Non-migratory.

Status

Not in jeopardy. Game bird. Protected by the British Columbia Wildlife Act (1982).

Selected References

Haas 1974; Pendergast and Boag 1970.

Spruce Grouse

Blue Grouse
BLGR
Dendragapus obscurus (Say)

Distribution, Seasonality and Abundance

Common resident; breeds throughout British Columbia. Locally absent or uncommon north of latitude 52N on the mainland.

Habitat Requirements - Reproduction

HABITAT CLASSES: On the coast prefers all forested habitats which have natural openings or burns and logged areas. In the Interior prefers forested upland habitats which are associated with open grassland; will also use dense trembling aspen groves and meadow edges adjacent to dense coniferous forests. Nests from sea level to 2200 m.

SPECIFIC HABITAT ELEMENTS: Nests are built on the ground. Coastal breeding males prefer to call from trees and Interior males call from the ground.

Habitat Requirements - Feeding

HABITAT CLASSES: Forages in coniferous and mixed forested habitats.

SPECIFIC HABITAT ELEMENTS: Browses and gleans vegetative and animal prey on the ground and in trees. Diet consists primarily of vegetative food, including buds, needles and flowers of coniferous trees (ponderosa pine, Douglas-fir, western hemlock and mountain hemlock) along with various fruits, berries, seeds, leaves, and flowers. A small portion of the diet includes animal matter, such as grasshoppers, beetles, ants, and caterpillars. In winter they feed exclusively on Douglas-fir needles, buds, and flowers (Munro 1919b).

Habitat Requirements - Special Needs

HABITAT CLASSES: In the Interior, prefers coniferous forests with moderate to steep slopes for escape.

Territory/Home Range

Males maintain territories which vary with the number of birds from .05 to 5 ha (Bendell and Elliott 1961; Boag 1966). Males show site fidelity returning to the same territories over a number of years. Females have home ranges which averaged 25 ha (Boag 1966) while home ranges for broods were 400 m to 1200 m (Mussehl 1960).

Activity and Movement Patterns

Diurnal. In October most populations migrate from grassland and clearings to higher elevation coniferous forests to spend the winter living in the branches of coniferous trees (Verner and Boss 1980).

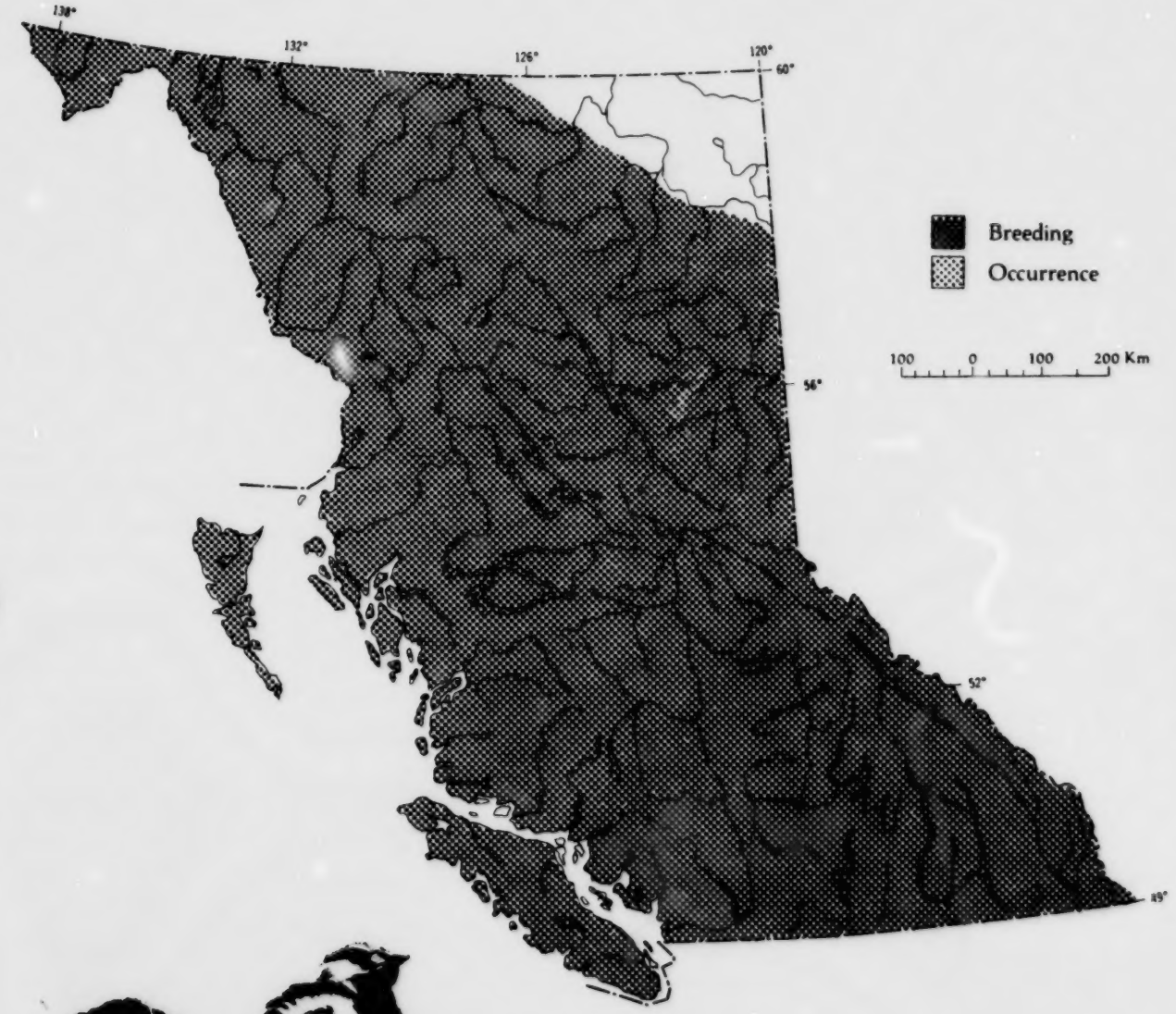
Status

Not in jeopardy. Game bird. Protected by the British Columbia Wildlife Act (1982).

Selected References

Bendell and Elliott 1966, 1967; Hoffman 1956; Redfield 1972; Zwickel 1965; Zwickel and Bendell 1972.

Blue Grouse


138°
132°
126°
120°
60°
Breeding
Occurrence
100 0 100 200 Km
56°
52°
49°

Ruffed Grouse
RUGR
Bonasa umbellus (Linnaeus)

Distribution, Seasonality and Abundance

Common resident; breeds throughout British Columbia except the Queen Charlotte Islands and adjacent islands along the central mainland coast.

Habitat Requirements - Reproduction

HABITAT CLASSES: Breeds in second-growth deciduous and mixed forested upland and man-influenced habitats. Nests are found between sea level and 2200 m with most below 1200 m.

SPECIFIC HABITAT ELEMENTS: Nests are built on the ground, usually at the base of a tree, adjacent to logs, and under bushes.

Habitat Requirements - Feeding

HABITAT CLASSES: Forages in deciduous forested habitats including forest edges and openings.

SPECIFIC HABITAT ELEMENTS: Browses and gleans vegetative and animal food. Diet includes buds, leaves and catkins of deciduous trees and shrubs (trembling aspen, cherries, birches, willows, saskatoon, and red-osier dogwood), native berries (highbush blueberry, roses, mountain-ashes, mistletoe and blueberries), seeds, and insects (ants, wasps, beetles and spiders). Gravel is also eaten. In winter, eats mainly deciduous buds. Newly hatched young concentrate their feeding on insects.

Habitat Requirements - Special Needs

HABITAT CLASSES: Uses coniferous forest for shelter.

Habitat Requirements - Pattern

A mixture of open areas, shrubby forest edges, mixed deciduous and coniferous second-growth forests.

Territory/Home Range

Territories vary in relation to type of habitat from 5 to 120 ha (Bump *et al.* 1947).

Activity and Movement Patterns

Diurnal. Flocks form in autumn and there is some local movement (Bump 1947).

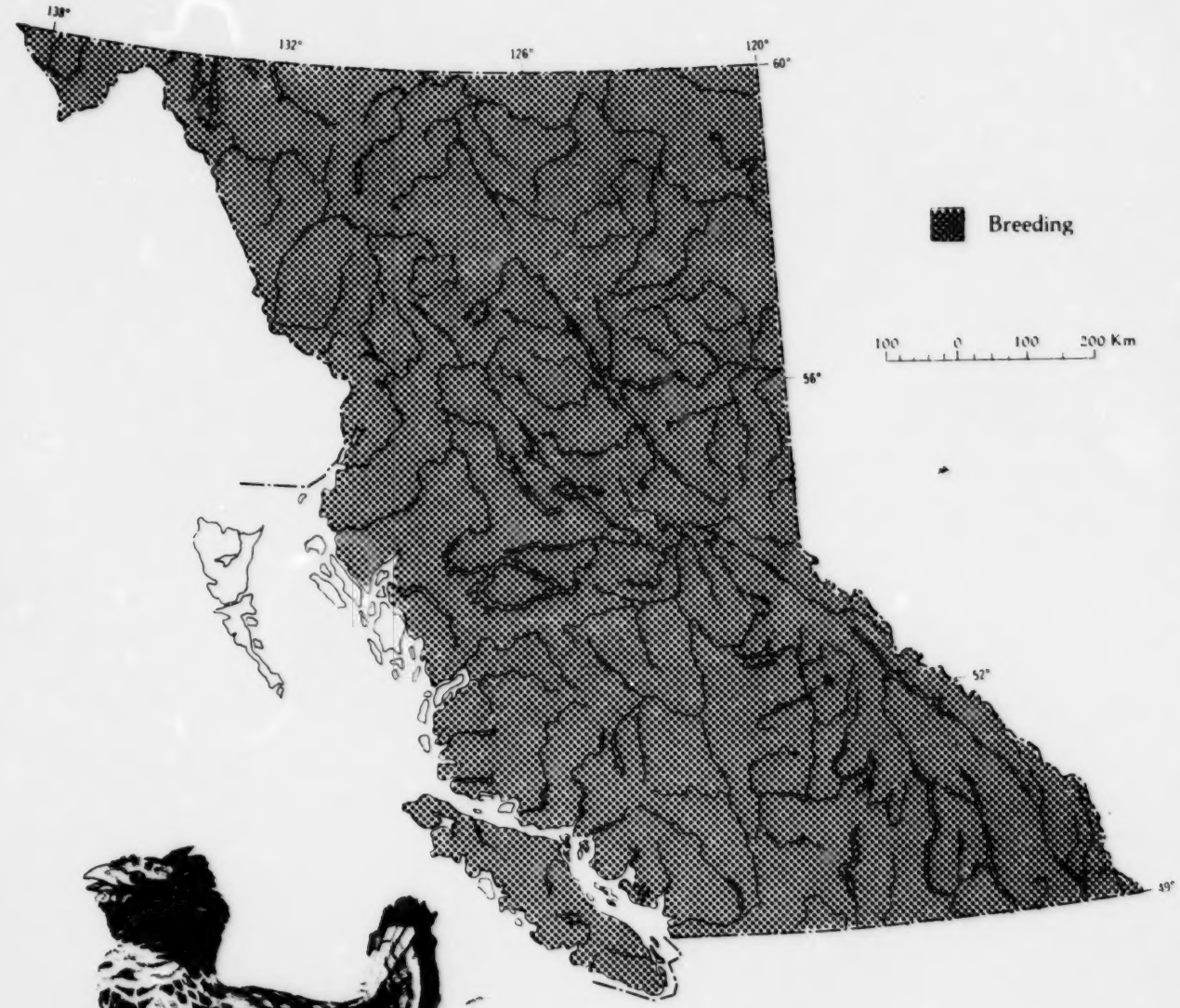
Status

Not in jeopardy. Game bird. Protected by the British Columbia Wildlife Act (1982).

Selected References

Bump *et al.* 1947; Davies 1973; Gullion 1977; Gullion and Svoboda 1972; Marshall 1946; Moulton and Vanderschaegan 1974.

Ruffed Grouse



Sharp-tailed Grouse
STGR
Tympanuchus phasianellus (Linnaeus)

Distribution, Seasonality and Abundance

Uncommon resident; breeds from the International Boundary north through the Okanagan Valley into the Chilcotin and along the Columbia River Valley to Invermere. Breeds in the Peace River area north to 60N. An isolated population is established in the Vanderhoof area.

Habitat Requirements - Reproduction

HABITAT CLASSES: Breeds in non-forested habitats (e.g. alpine/subalpine wet meadows, sagebrush steppe, southern bunchgrass steppe, boreal bunchgrass steppe, pasture) frequently associated with brushy areas. Also uses shrub fens/carrs. Nests are found between 300 and 2200 m. Sparsely vegetated areas are utilized for leks.

SPECIFIC HABITAT ELEMENTS: Nests are built on the ground near grass clumps, large herbs or shrubs.

Habitat Requirements - Feeding

HABITAT CLASSES: Forages in a variety of non-forested and semi-open forested upland, palustrine and man-influenced habitats.

SPECIFIC HABITAT ELEMENTS: In spring and summer, prefers green vegetation (leaves and flowers of native species and cultivated grain, clover, and alfalfa) and insects. During autumn a variety of native seeds and fruits are eaten in addition to cultivated grains. In winter eats buds, berries, and seeds from a variety of deciduous trees and shrubs. Insects comprise the bulk of the chicks' diet (Kobriger 1965).

Habitat Requirements - Special Needs

HABITAT CLASSES: Requires deciduous riparian areas in valley bottoms, with birches and aspen, for winter shelter and feeding sites.

Habitat Requirements - Pattern

Open foraging areas associated with deciduous shrubby or forested areas for shelter, escape, and winter cover.

Territory/Home Range

In Alberta, lek areas ranged from 14 to 170 m^2. In Montana the average was 50 m^2 (Hjorth 1970).

Activity and Movement Patterns

Diurnal. Flocks form in autumn and move locally to woody deciduous cover. In spring, males aggregate for courtship activities in leks.

Status

Not in jeopardy. Game bird. Protected by the British Columbia Wildlife Act (1982).

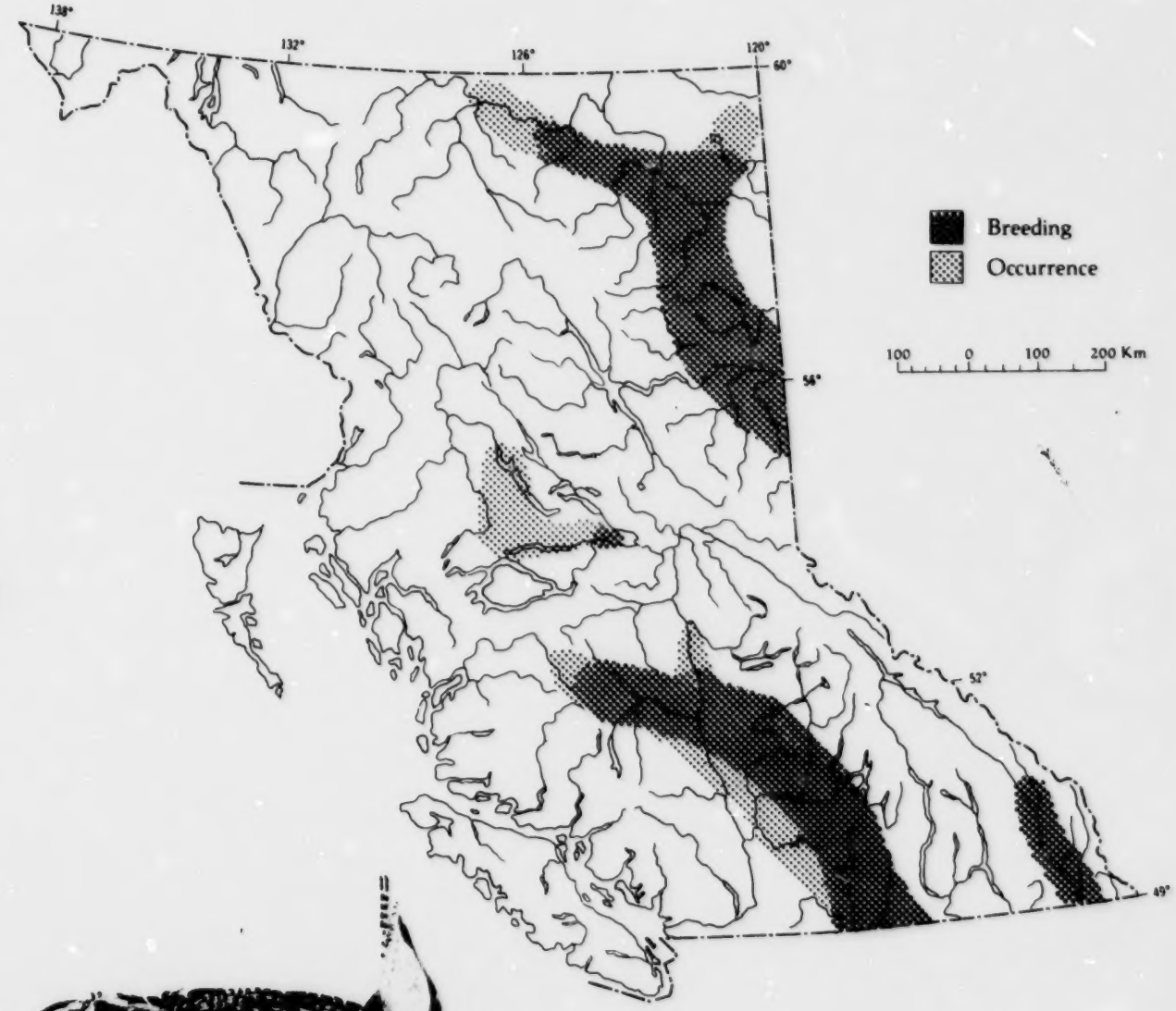
Other

Hunting pressure can result in extirpation of local populations.

Selected References

Evans 1968; Johnsgard 1973; Jones 1966.

Sharp-tailed Grouse



Sandhill Crane
SACR
Grus canadensis (Linnaeus)

Distribution, Seasonality and Abundance

Rare summer breeder in the Fraser Valley (Burns Bog, Pitt Meadows), the Queen Charlotte Islands, the outer coastal islands, the northeastern corner of the province and the north Okanagan north through the Cariboo-Chilcotin to the Prince George area. Historically also nested in the southern Okanagan.

Habitat Requirements - Reproduction

HABITAT CLASSES: Breeds in a variety of non-forested wetland, upland, and agricultural habitats, between sea level and 1300 m.

SPECIFIC HABITAT ELEMENTS: Nests are on the ground, often in wet areas. In Idaho water depth around nests averaged 20 cm and upland nests averaged 9.6 m from water (Drewier 1973).

Habitat Requirements - Feeding

HABITAT CLASSES: Forages in various non-forested upland, wetland, and agricultural habitats.

SPECIFIC HABITAT ELEMENTS: Forages on the ground or in shallow water. Diet elements include insects, small mammals, reptiles and amphibians, a variety of native roots and berries, and cultivated grains (wheat, oats).

Habitat Requirements - Special Needs

Requires grain fields and farmland for staging areas during migration.

Territory/Home Range

In Idaho the mean territory size was 17 ha (Drewier 1973).

Activity and Movement Patterns

Diurnal. Migrates by day in small to very large flocks. On the coast, spring migration commences in March; in the Interior, it occurs mainly during late April. Autumn migration begins in August, builds during September, and is complete by late October. In spring, most migration is across the Interior plateau following grasslands (Myres and Cannings 1971).

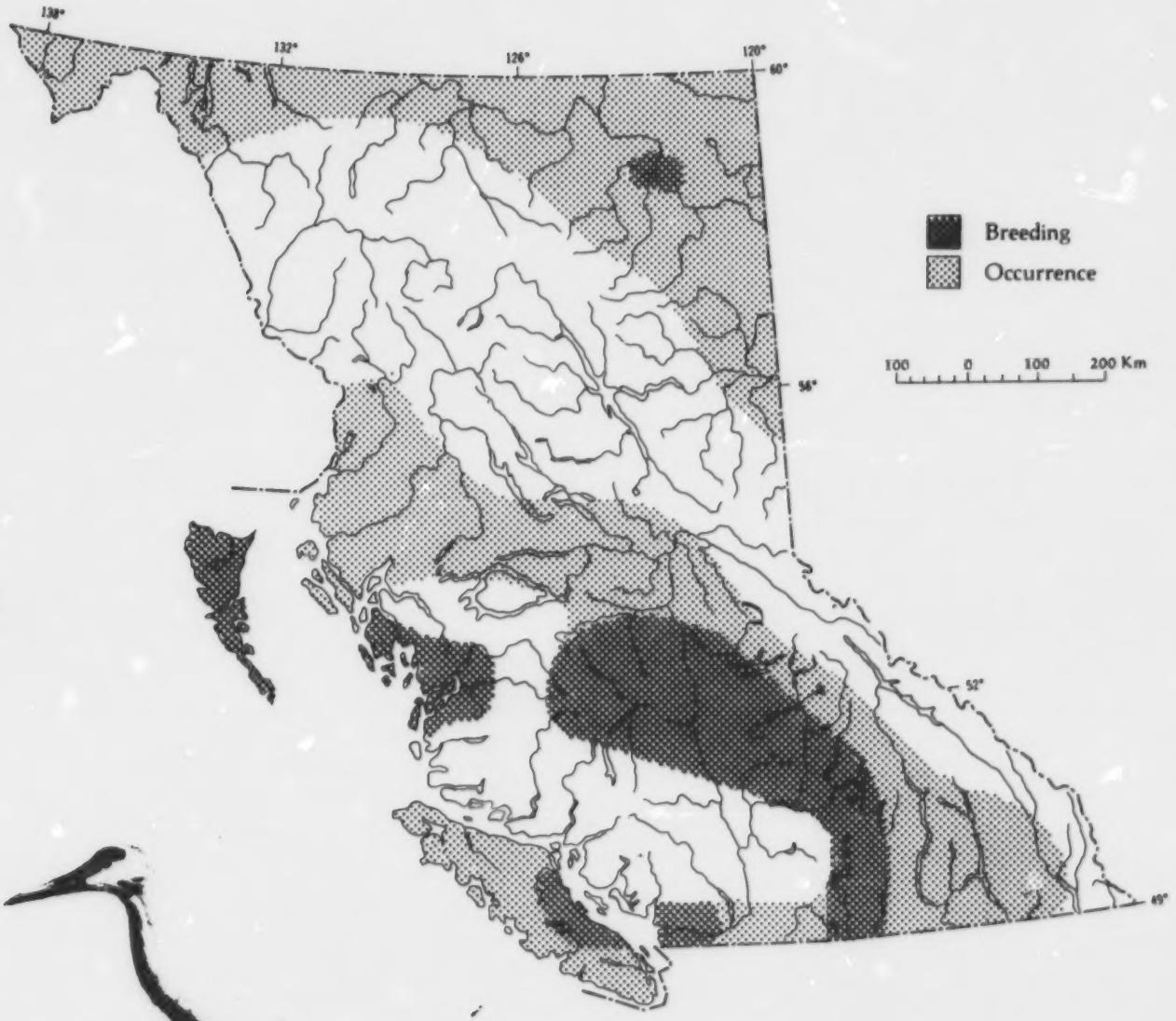
Status

Larger subspecies, *(G.c. tabida)* sensitive (indeterminate). Smaller subspecies *(G.c. canadensis)* not in jeopardy. Migratory game bird. Protected by the Migratory Birds Convention Act (1917) and the British Columbia Wildlife Act (1982).

Selected References

Drewier 1973; Reeves 1975; Walkinshaw 1942.

Sandhill Crane



Greater Yellowlegs
GRYE
Tringa melanoleuca (Gmelin)

Distribution, Seasonality and Abundance

Uncommon breeder in central British Columbia. Also rare breeder on outer coast (Porcher Island). Winters in small numbers along the shores of the Straits of Georgia and Juan de Fuca.

Habitat Requirements - Reproduction

HABITAT CLASSES: Breeds in high canopy, open coniferous or deciduous forested habitats with sparse undergrowth or burned areas, usually associated with sphagnum bogs, sedge fens, ponds, or fresh emergent wetland between 1000 and 1500 m elevation.

SPECIFIC HABITAT ELEMENTS: Nests are on the ground, usually near water.

Habitat Requirements - Feeding

HABITAT CLASSES: Forages in wetland habitats such as sphagnum bogs, ponds, sedge fens/meadows, fresh emergent wetland, or shrub fens/carrs.

SPECIFIC HABITAT ELEMENTS: Forages by skimming and picking animal prey in shallow water. Diet elements include aquatic prey (waterboatman, larvae, fish) and shoreline terrestrial prey (ants, flies, grasshoppers, worms). Will occasionally probe mud.

Habitat Requirements - Pattern

High canopied open woodland with low sparse undergrowth or burned over grassy areas near wetlands.

Territory/Home Range

No information available.

Activity and Movement Patterns

Diurnal. Migrates individually or in small groups (Johnsgard 1981). Spring migration occurs from mid April to mid May. Southward autumn migration may commence in late June, with peak movement in early August and continuing through September and early Octber.

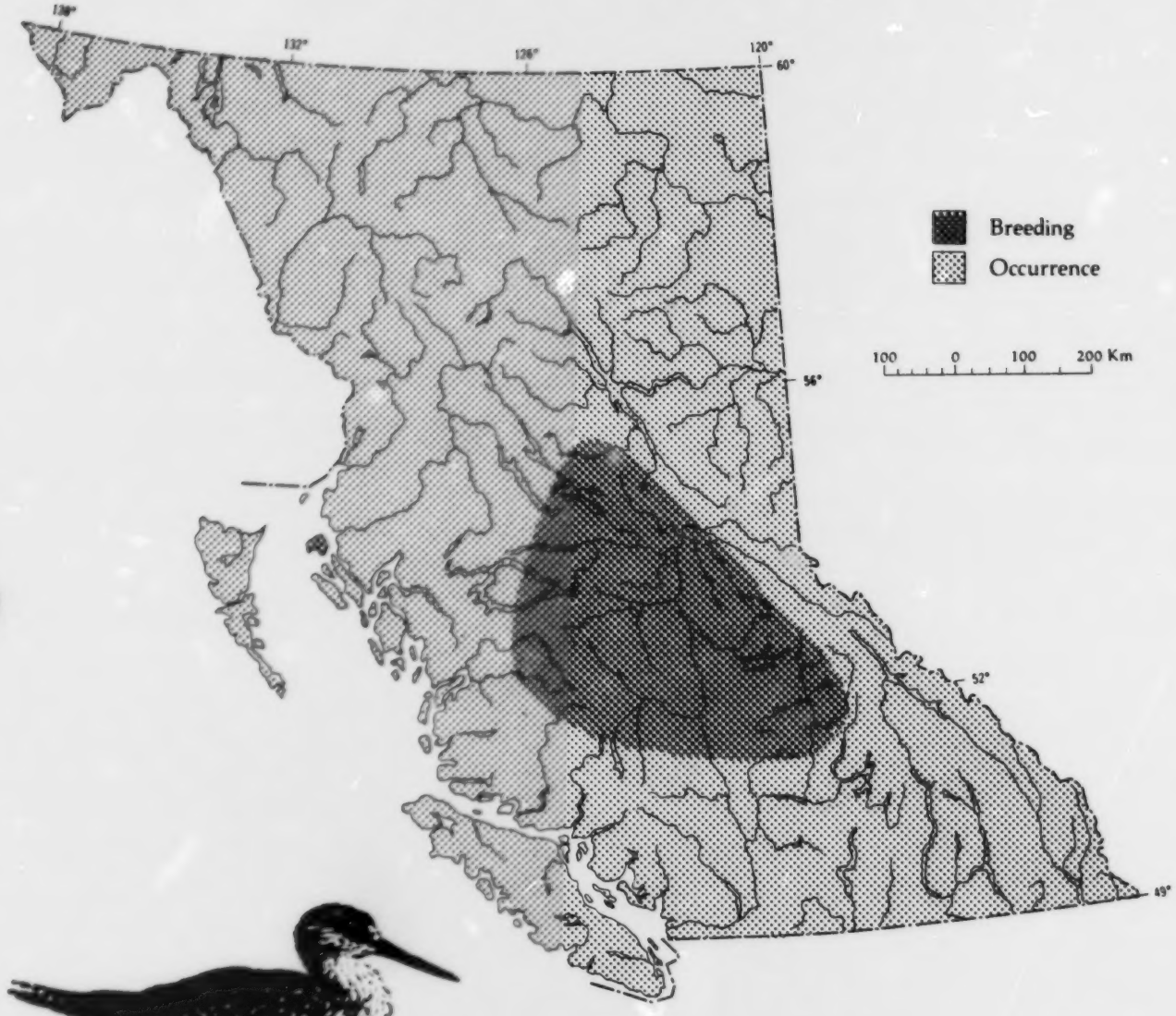
Status

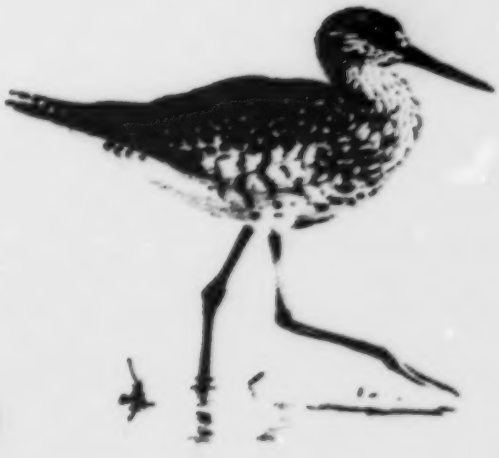
Not in jeopardy. Migratory game bird. Protected by the Migratory Birds Convention Act (1917) and the British Columbia Wildlife Act (1982).

Selected References

Berstenberg and Jurek 1972; Johnsgard 1981.

Greater Yellowlegs





Solitary Sandpiper
SOSA
Tringa solitaria (Wilson)

Distribution, Seasonality and Abundance

Common breeder from the central Interior (Cariboo and Chilcotin) northward east of the Coast Mountains.

Habitat Requirements - Reproduction

HABITAT CLASSES: Breeds in all successional stages of coniferous and deciduous upland forested habitats and forested wetlands (e.g. black spruce - tamarack bogs), usually associated with wet areas, between 500 and 1800 m.

SPECIFIC HABITAT ELEMENTS: Does not build its own nest, but uses old nests of passerine species, such as American Robin, Common Grackle, Rusty Blackbird, Bohemian Waxwing, Eastern Kingbird, and Gray Jay. Nest heights range from 1 to 12 m above ground and up to 200 m from a water body shoreline.

Habitat Requirements - Feeding

HABITAT CLASSES: Forages in moist forests, sphagnum bogs, ponds, sedge fens/meadows, fresh emergent wetlands, and shrub fens/carrs.

SPECIFIC HABITAT ELEMENTS: Forages by picking and gleaning or flycatching animal prey in or over shallow water. Diet elements include aquatic insects, larvae, nymphs, waterboatmen, small frogs, and small crustaceans from the water's surface, subsurface and bottom (which is agitated by gently moving one foot). Also flycatches (grasshoppers) and picks prey (spiders, caterpillars, and worms) from solid surfaces. Makes use of fallen logs and other debris for additional foraging access into open water.

Habitat Requirements - Pattern

Open water associated with wetlands or coniferous forest.

Territory/Home Range

In Alberta, one territory was estimated to be 0.5 km^2 within a larger home range (Oring 1973).

Activity and Movement Patterns

Diurnal but migrates at night individually or in small groups (Johnsgard 1981). Spring migration occurs in early May; autumn migration occurs in August and September.

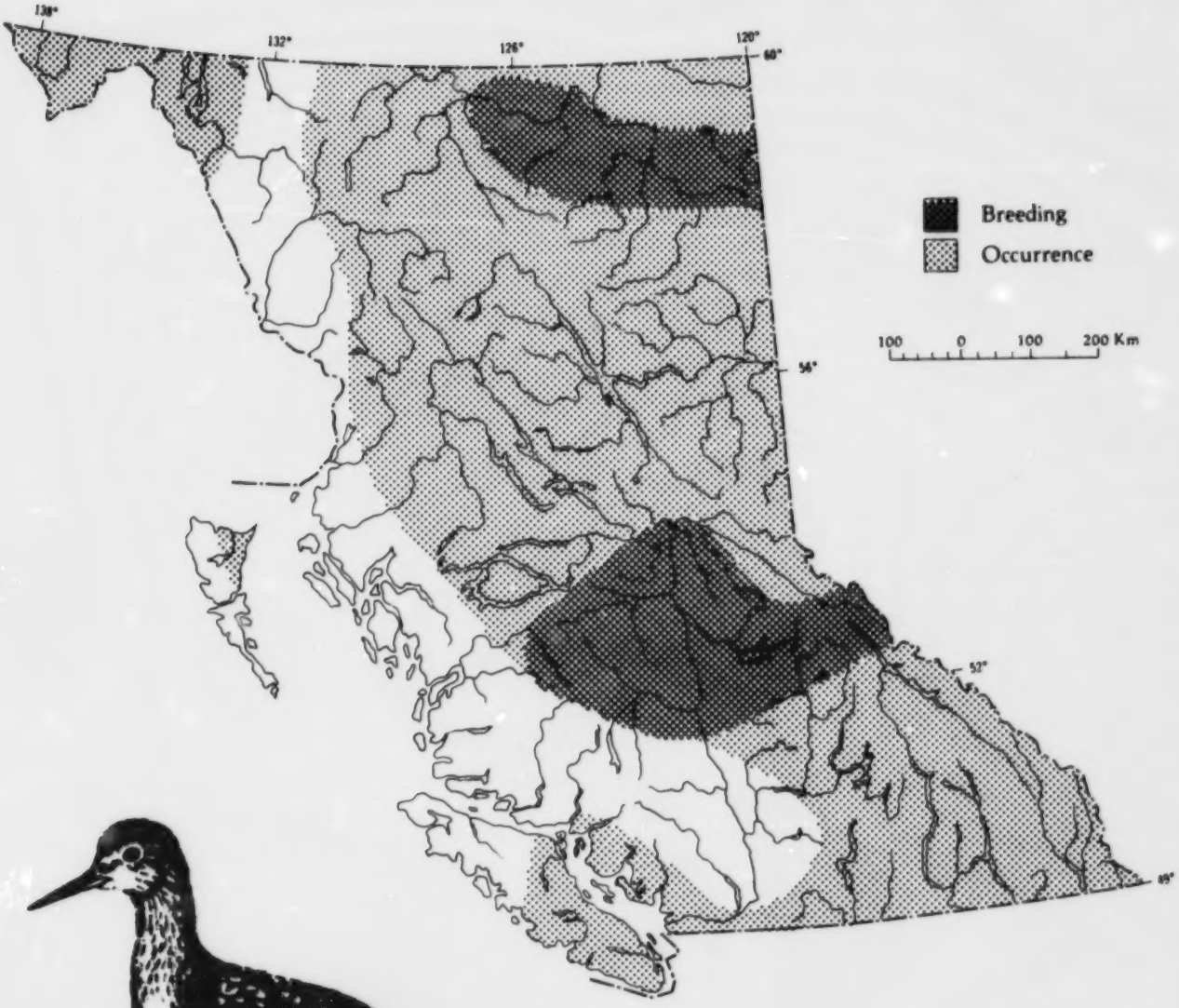
Status

Not in jeopardy. Migratory game bird. Protected by the Migratory Birds Convention Act (1917) and the British Columbia Wildlife Act (1982).

Selected References

Gerstenberg and Jurek 1972; Johnsgard 1981.

Solitary Sandpiper



Long-billed Curlew
LBCU
Numenius americanus Bechstein

Distribution, Seasonality and Abundance

Uncommon local breeder in the Interior from the International Boundary north through the east Kootenays (to Skookumchuck) and through the Okanagan Valley to the northern Cariboo-Chilcotin. Along the coast, casual visitant in summer; rare in winter on the southwest coast.

Habitat Requirements - Reproduction

HABITAT CLASSES: Breeds in nonforested habitats such as sagebrush steppe, southern bunchgrass steppe, and pastures in the southern Interior, between 300 and 1000 m elevation.

SPECIFIC HABITAT ELEMENTS: Nests are placed away from tall herbaceous or shrubby vegetation on bare or sparsely vegetated ground often near a small landmark such as a rock or pile of cow dung.

Habitat Requirements - Feeding

HABITAT CLASSES: Forages in sagebrush steppe, southern bunchgrass steppe, and pastures. Young are led to moister feeding areas such as seepage sites, wet meadows, and alfalfa fields.

SPECIFIC HABITAT ELEMENTS: Forages by plucking and probing the ground surface. In summer, eats mainly invertebrates (worms, larvae, crawfish, grasshoppers, crickets, beetles, caterpillars, spiders, flies, butterflies) and occasionally vertebrates (amphibians) and vegetable matter (berries).

Habitat Requirements - Pattern

Open areas with short sparse vegetation (grassland steppe, early successional sagebrush steppe, or pasture) and nearby open moist sites.

Territory/Home Range

Nesting territory may encompass 2 ha and show site fidelity (Thomas 1979).

Activity and Movement Patterns

Diurnal. Spring migration occurs in late March and early April; autumn migration mostly occurs from late July through August. Most migration occurs through the Interior.

Status

Not in jeopardy. Migratory game bird. Protected by the Migratory Birds Convention Act (1917) and the British Columbia Wildlife Act (1982).

Selected References

Gerstenberg and Jurek 1972.

Long-billed Curlew

Flammulated Owl
FLOW
Otus flammeolus (Kaup)

Distribution, Seasonality and Abundance

Uncommon breeder in the Okanagan Valley and north on the Thompson Plateau to the vicinity of Kamloops. Occurs in the Rocky Mountain Trench north to Radium.

Habitat Requirements - Reproduction

HABITAT CLASSES: Breeds in the Douglas-fir - lodgepole pine forests, Douglas-fir - ponderosa pine forests, and ponderosa pine parkland habitats. The preferred nest sites have well spaced Douglas-firs of varying ages, thick clumps of young trees and a significant proportion of veteran firs and ponderosa pines, resulting in a parkland appearance in places. The understory is open, consisting largely of pinegrass, bluebunch wheatgrass, spirea and isolated tall shrubs such as saskatoon. Slope and aspect varies but generally slopes are moderate to steep with topography dissected by streams and gullies.

SPECIFIC HABITAT ELEMENTS: Nests in cavities in coniferous stumps or snags and in nest boxes; cannot excavate own nest site. Nests in Douglas-fir, ponderosa pine, and nest boxes between 1 to 15 m in height. In Oregon, nest trees had a minimum d.b.h. of 30.5 cm (Thomas 1979).

Habitat Requirements - Feeding

HABITAT CLASSES: Forages in ponderosa pine parkland, Douglas-fir - ponderosa pine forests and Douglas-fir - lodgepole pine forests.

SPECIFIC HABITAT ELEMENTS: Searches for and pounces on animal prey in flight or on the ground. Eats insects (moths, beetles, millipedes, katydids) and possibly small birds and mammals as recorded in Oregon (Bull and Anderson 1978).

Habitat Requirements - Pattern

Slopes where large, well-spaced Douglas-fir and ponderosa pine are interspersed with small dense clumps of younger Douglas-fir. Nesting cavities must also be available.

Activity and Movement Patterns

Nocturnal. Spring migrants arrive in early May. Autumn migration occurs mostly in late August and early September.

Status

Sensitive (indeterminate), perhaps threatened (W. Munro, pers. comm.). Raptor. Protected by the British Columbia Wildlife Act (1982).

Other

Nesting sites may be in short supply because resident Northern Saw-whet Owls nest in the same habitat and occupy the available nest cavities earlier than migrating Flammulated Owls.

Selected References

Balda 1975; Bull and Anderson 1978; Clark *et al.* 1978; Karalus and Eckert 1974; Winter 1974.

Flammulated Owl

Burrowing Owl
BUOW
Athene cunicularia (Molina)

Distribution, Seasonality and Abundance

Rare and local breeder in the Okanagan, Thompson, and Nicola Valleys north to Kamloops. Rare resident on the southwest mainland coast. Casual elsewhere including Vancouver Island, Cariboo, and East Kootenays.

Habitat Requirements - Reproduction

HABITAT CLASSES: Breeds in nonforested sagebrush steppe and southern bunchgrass steppe in the Interior and has bred in man-influenced habitat (short-grass reclaimed agricultural fields) on the coast, between sea level and 500 m. The preferred nesting sites are in open areas with scattered vegetation.

SPECIFIC HABITAT ELEMENTS: Nests in natural and man-made burrows; usually does not excavate own nest site. Natural sites include abandoned burrows of Yellow-bellied Marmots, Striped Skunks, Badgers, and Belted Kingfishers. Natural burrows are usually sloping tunnels up to 3 m long which descend 1 to 1.2 m, then bend and rise gently to the nest chamber (Alcorn 1974). Man-made sites such as drainpipes and culverts are also used.

Habitat Requirements - Feeding

HABITAT CLASSES: Forages in sagebrush steppe and southern bunchgrass steppe.

SPECIFIC HABITAT ELEMENTS: Searches for and pounces on various invertebrates and vertebrates, or hawks for flying insects. Diet elements include insects (grasshoppers, beetles, crickets), birds, and rodents (Munro 1929).

Habitat Requirements - Special Needs

SPECIFIC HABITAT ELEMENTS: Burrows are used for shelter from adverse weather and predators.

Territory/Home Range

Solitary or colonial nester. Territory, around the nest burrow, has been recorded from 0.05 to 2 ha (Thomsen 1971; Martin 1973a; Butts 1973). The home range of an adult is less than 3 km from its nest burrow (Butts 1971).

Activity and Movement Patterns

Mainly nocturnal, and crepuscular when feeding young. Most spring migrants arrive in April; autumn migration occurs in September.

Status

Endangered. Raptor. Protected by the British Columbia Wildlife Act (1982).

Other

Nesting burrow availability may be a limiting factor because of rodent control programs (e.g. ground squirrels), disappearance of the Badger, and conflicting use by ranchers, resulting in disappearance of nesting sites.

Selected References

Butts 1973; Clark *et al.* 1978; Howie 1980; Zarn 1974.

Burrowing Owl

Barred Owl
BAOW
Strix varia Barton

Distribution, Seasonality and Abundance

Uncommon resident throughout the southern Interior of the province south of Prince George area, and east of the Coast Range, but including Vancouver Island.

Habitat Requirements - Reproduction

HABITAT CLASSES: Breeds in dense forested upland habitats, usually near water, and between sea level and 1200 m in elevation.

SPECIFIC HABITAT ELEMENTS: Nests in coniferous or deciduous trees. Cannot excavate nest site. Dependent on natural cavities, animal-produced holes, and nests of other species; usually does not build its own nest. All British Columbia nests were in hollowed out tops of dead Douglas-fir and natural cavities in black cottonwood, usually near water.

Habitat Requirements - Feeding

HABITAT CLASSES: Forages over a broad range of forested, semi-forested and aquatic habitats.

SPECIFIC HABITAT ELEMENTS: Locates prey from a perch and then pounces on it. Carnivorous. Diet elements include small to medium sized mammals (e.g. squirrels, mice, voles) and birds (e.g. crossbills, thrushes, quail, doves).

Habitat Requirements - Pattern

Dense mature coniferous and/or mixed forests associated with water.

Territory/Home Range

In Oregon, home ranges were 241 ha (Thomas 1979).

Activity and Movement Patterns

Nocturnal but may be active during daylight. Mainly sedentary but in some winters, general dispersal southward is evident.

Status

Not in jeopardy. Raptor. Protected by the British Columbia Wildlife Act (1982).

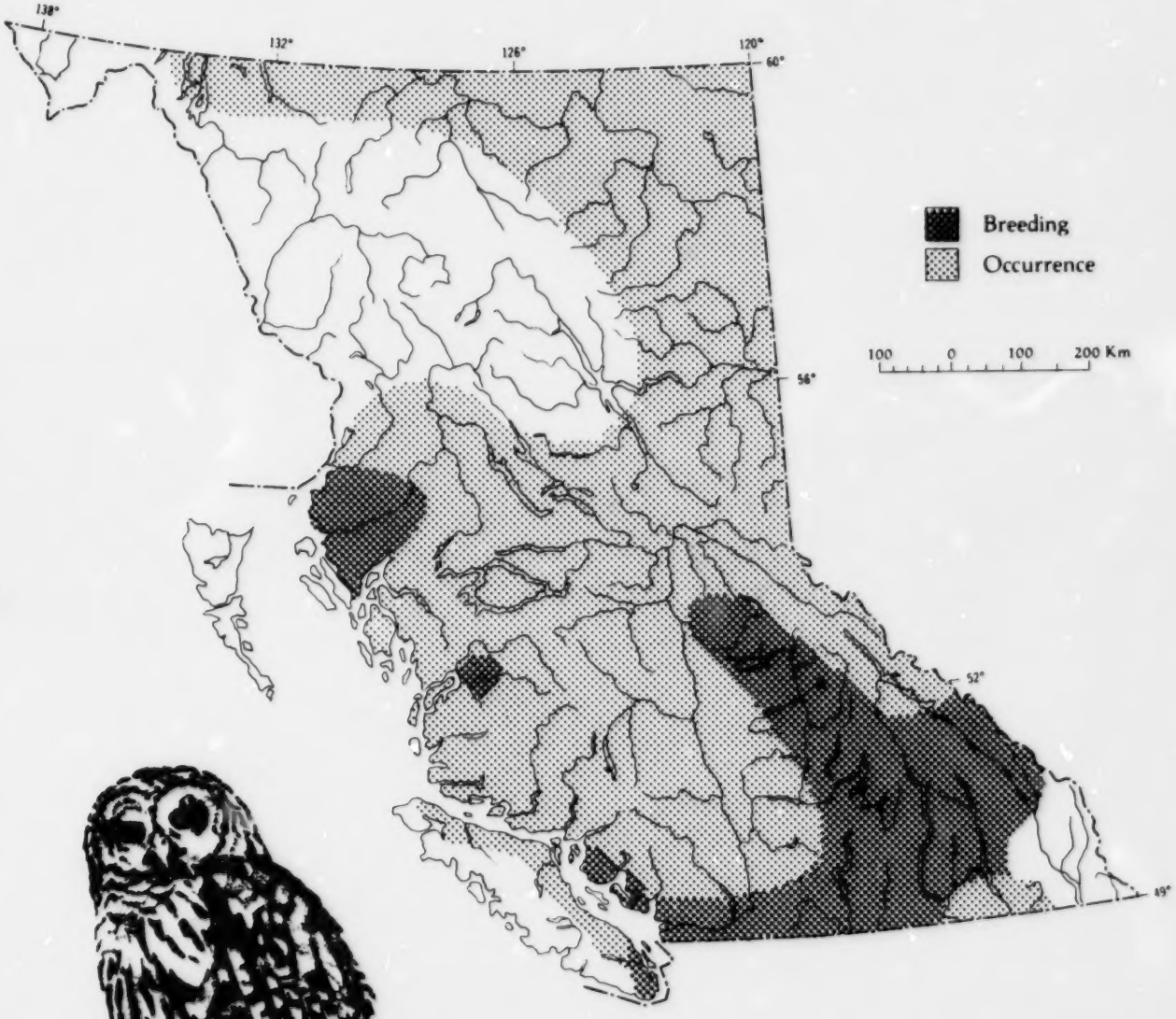
Other

Barred Owls are presently expanding their range into areas traditionally occupied by sedentary Spotted Owls. There is some concern that, due to the versatility of the Barred Owl's habitat and food requirements, it may slowly replace Spotted Owls.

Selected References

Campbell *et al.* 1985; Clark *et al.* 1978; Danstan and Sample 1972; Nicholls and Warner 1972.

Barred Owl


138°
132°
126°
120°
60°
56°
52°
49°
Breeding
Occurrence
100 0 100 200 Km

Northern Saw-whet Owl
NSWO
Aegolius acadicus (Gmelin)
[Saw-whet Owl]

Distribution, Seasonality and Abundance

Uncommon breeder across the southern third of the province including Vancouver Island and the Queen Charlotte Islands. Very rare elsewhere.

Habitat Requirements - Reproduction

HABITAT CLASSES: Breeds in deciduous and coniferous forested habitats.

SPECIFIC HABITAT ELEMENTS: Nests in natural and animal-produced cavities in coniferous and deciduous trees; cannot excavate own nest site. Nest sites are located in woodpecker holes and in natural cavities and nest boxes, in large dead and living trees. Heights of natural nest sites range from 1 to 5 m, with minimum d.b.h. of 30.5 cm (Thomas 1979).

Habitat Requirements - Feeding

HABITAT CLASSES: Forages over a broad range of forested habitats, with frequent use of openings and edges.

SPECIFIC HABITAT ELEMENTS: Locates prey from a perch and then pounces on it. Carnivorous. Diet elements include small mammals (e.g. voles, mice, shrews) and birds (e.g. thrushes, Dark-eyed Junco, sparrows, and finches). Occasionally, amphibians and insects are taken.

Territory/Home Range

In winter, one bird used 130 ha (Forbes and Warner 1974).

Activity and Movement Patterns

Nocturnal. Northern portions of the population are migratory. Spring migrants arrive in March and April; the main southward autumn movement occurs in October and November.

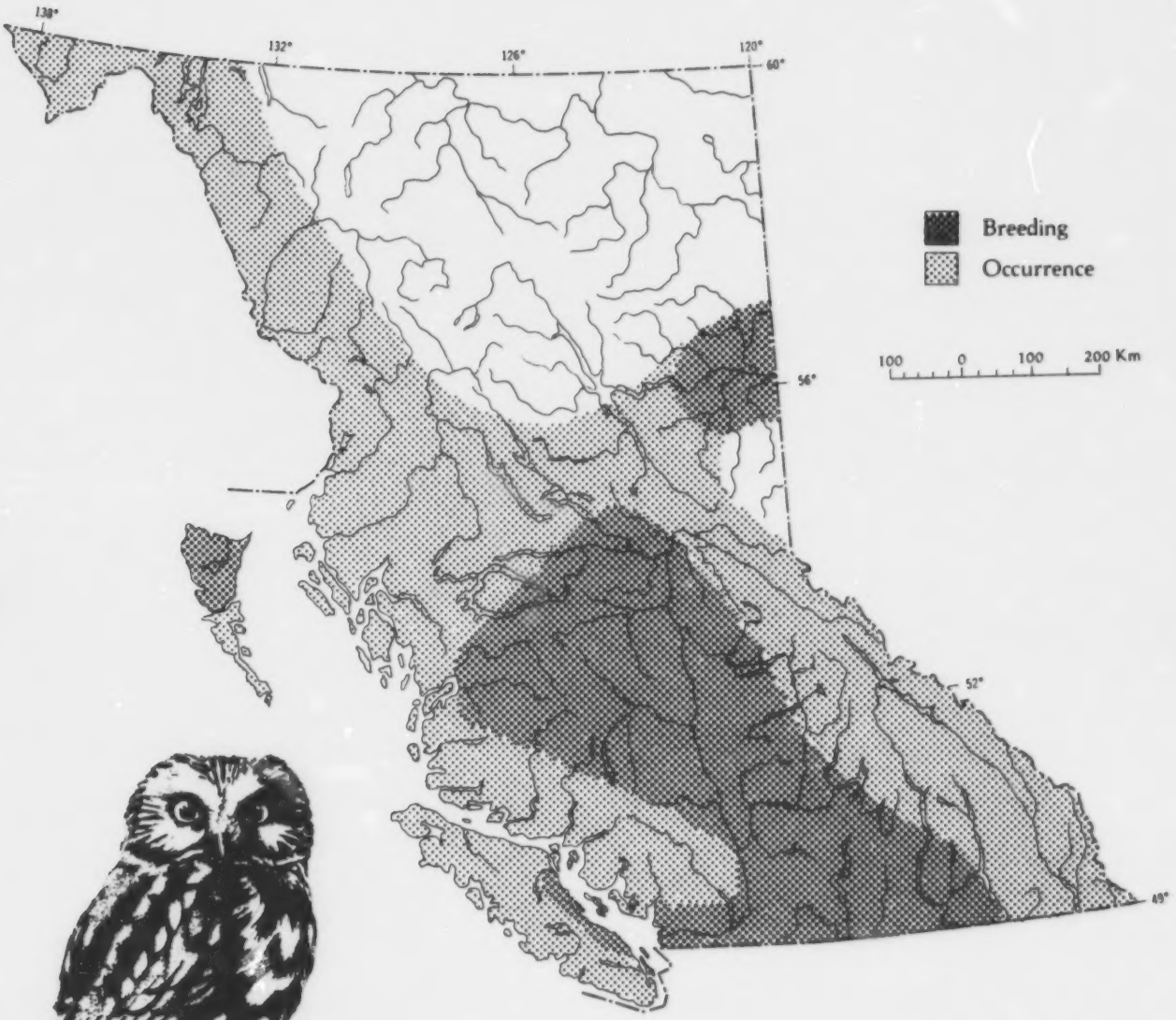
Status

Not in jeopardy. Raptor. Protected by the British Columbia Wildlife Act (1982).

Selected References

Clark *et al.* 1978; Jackman 1974a; Woods 1972.

Northern Saw-whet Owl



Lewis' Woodpecker
LEWO
Melanerpes lewis (Gray)

Distribution, Seasonality and Abundance

Uncommon to common breeder in the southern third of the province, with the major centre of abundance in the Okanagan Valley. Very rare north of the Cariboo and in the East and West Kootenay regions.

Habitat Requirements - Reproduction

HABITAT CLASSES: Breeds mainly in open forested upland habitats with sparse understories (e.g. Douglas-fir - ponderosa pine forests, ponderosa pine parkland, trembling aspen forests and riparian forests), cultivated fields, orchards, urban-residential areas, and pastures.

SPECIFIC HABITAT ELEMENTS: Nests are excavated in living and dead deciduous and coniferous trees with a preference for large trees with decaying centres. Black cottonwood and ponderosa pine are the most frequently used nest trees; power poles and fence posts are occasionally used. Minimum d.b.h. of nest trees was 30.5 cm (Thomas 1979).

Habitat Requirements - Feeding

HABITAT CLASSES: In summer, forages in reproductive habitats.

SPECIAL HABITAT ELEMENTS: In summer, forages for animal prey by flycatching and hawking from exposed perches such as the top of a dead tree or a bare limb, searching for insects on the ground or in low bushes, and occasionally gleaning and probing insects from tree surfaces (Bock 1970). Also eats various wild berries, fruits and nuts; in urban residental habitats; cultivated fruits and nuts are also used.

Territory/Home Range

In Oregon, Thomas (1979) gives the territory size as 6.1 ha.

Activity and Movement Patterns

Diurnal. Most are migratory. Spring migration occurs from early April to mid May; autumn migration commences in late August and carries through to early October. Some winter in the southern Okanagan Valley.

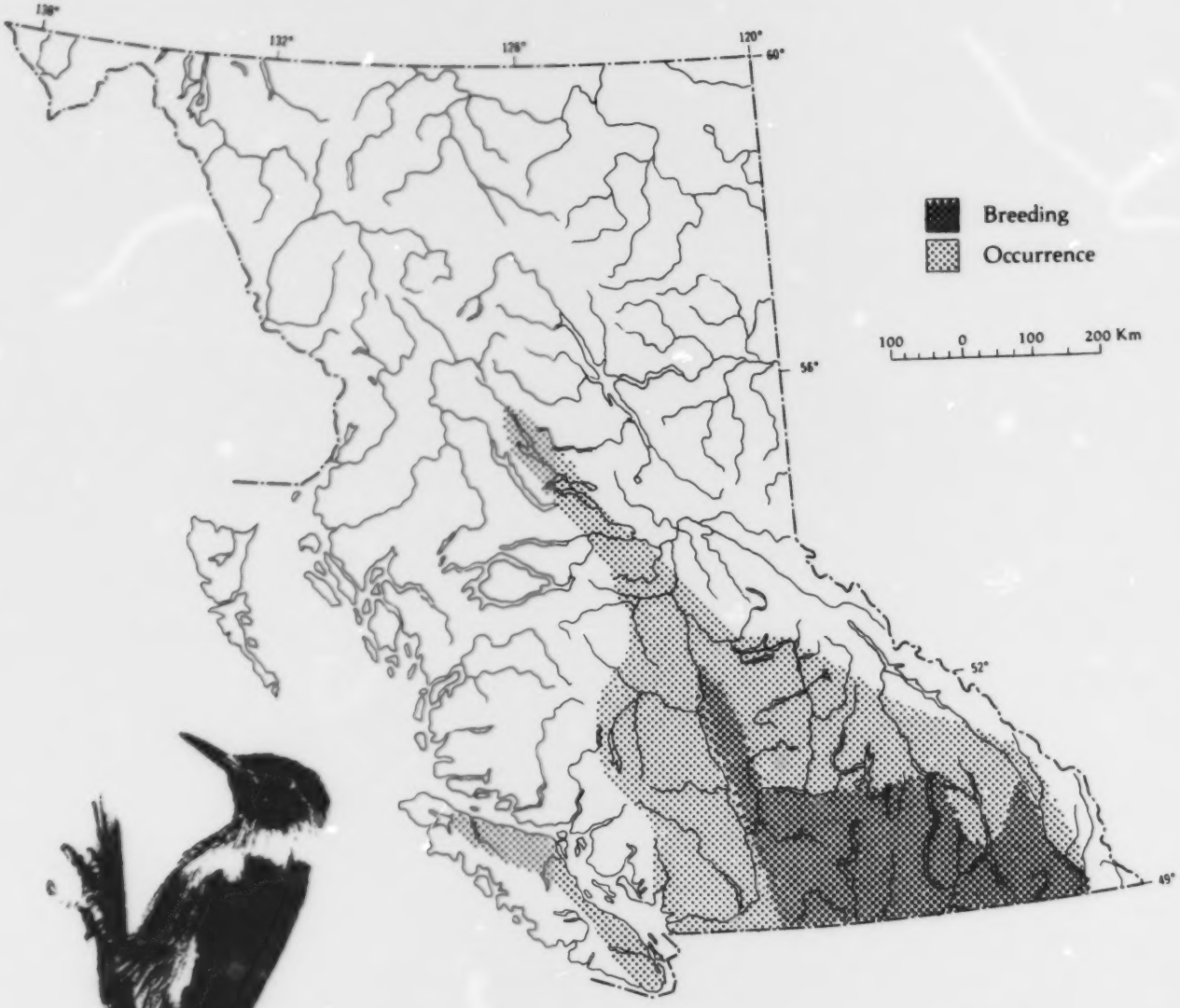
Status

Not in jeopardy. Migratory insectivorous bird. Extirpated in the extreme southwest coast. Protected by the Migratory Birds Convention Act (1917) and the British Columbia Wildlife Act (1982).

Selected References

Bock 1970; Jackman 1974b.

Lewis' Woodpecker



Downy Woodpecker
DOWO
Picoides pubescens (Linnaeus)

Distribution, Seasonality and Abundance

Uncommon resident throughout the province south of latitude 56N.

Habitat Requirements - Reproduction

HABITAT CLASSES: Breeds in mixed and deciduous forests with sparse to moderate canopy closures, usually near water, from sea level to 1100 m elevation.

SPECIFIC HABITAT ELEMENTS: Nests are excavated in living and dead deciduous (and rarely coniferous) trees, usually near wooded edges. The most often selected nest trees are trembling aspen, red alder, and black cottonwood. Nest heights ranged from 1 to 30 m. Minimum nest tree d.b.h. was 15.2 cm (Thomas 1979).

Habitat Requirements - Feeding

HABITAT CLASSES: Forages in reproductive habitats.

SPECIFIC HABITAT ELEMENTS: Feeds mainly on insects which it obtains by subsurface and surface foraging on deciduous and coniferous trees, shrubs and herbaceous vegetation. Feeds on the surface of trees in summer but switches to subsurface foraging during winter. Also eats some native fruits and seeds. In winter, feeders are utilized.

Territory/Home Range

Breeding territories in Ontario were 2.5 to 4 ha (Lawrence 1967) and in Oregon were 4 ha per pair (Thomas 1979).

Activity and Movement Patterns

Diurnal. Generally nonmigratory.

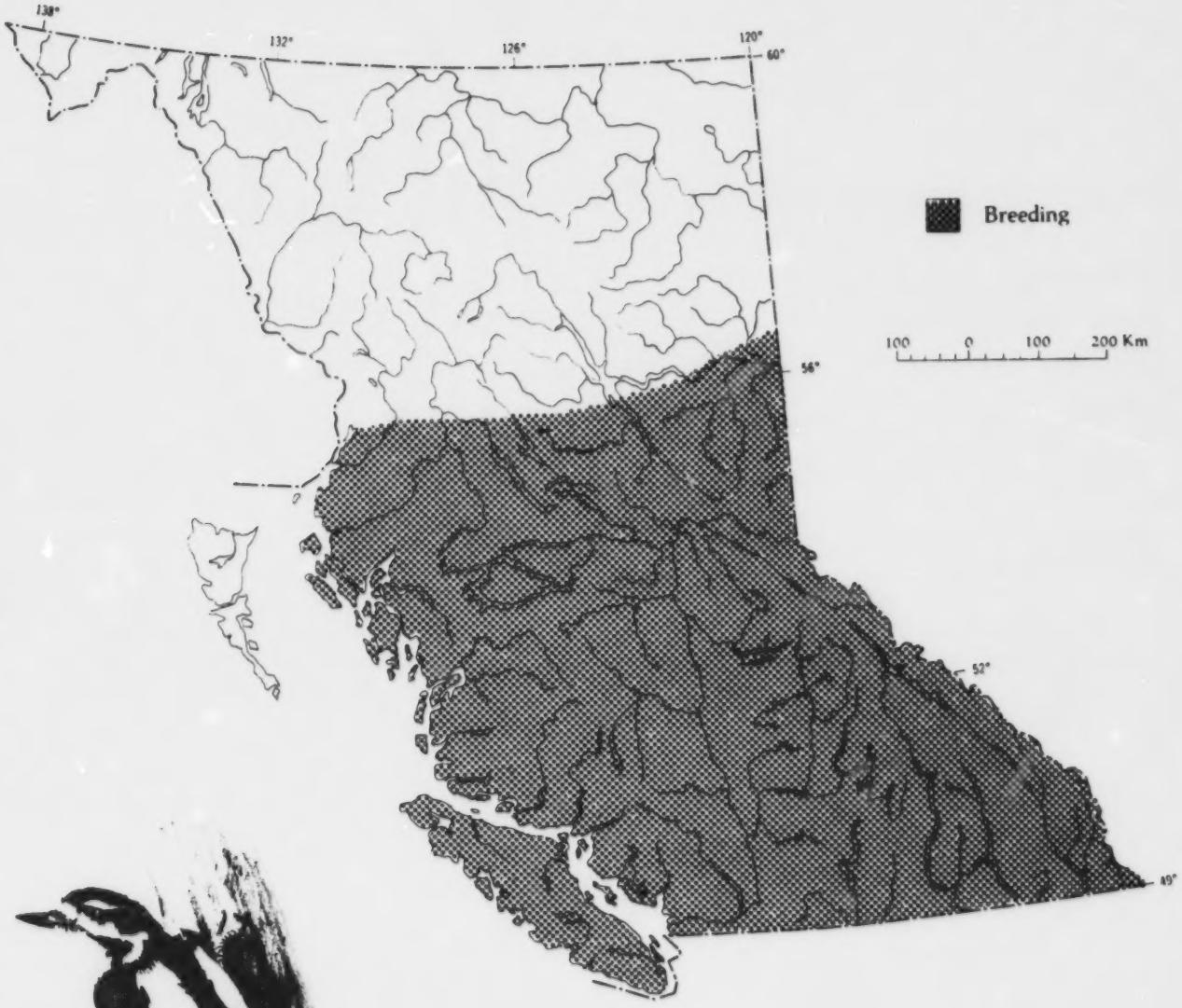
Status

Not in jeopardy. Migratory insectivorous bird. Protected by the Migratory Birds Convention Act (1917) and the British Columbia Wildlife Act (1982).

Selected References

Conner 1973; Jackman 1974b; Jackson 1970; Lawrence 1967; Staebler 1949.

Downy Woodpecker



Hairy Woodpecker
HAWO
Picoides villosus (Linnaeus)

Distribution, Seasonality and Abundance

Uncommon to fairly common resident throughout most of British Columbia including the Queen Charlotte Islands and Vancouver Island. Very rare in the northwest corner of the province.

Habitat Requirements - Reproduction

HABITAT CLASSES: Breeds in mature deciduous and mixed upland forests between sea level and 1900 m. Dense forests, open edges, burns, and logged areas are preferred for nest sites.

SPECIFIC HABITAT ELEMENTS: Nests are excavated in living and dead deciduous and coniferous trees. The most often selected nest trees are trembling aspen, red alder, and birches. Occasionally, fence posts, power poles, and nest boxes are used. Nest heights ranged from 1 to 40 m; minimum tree d.b.h. was 25.4 cm (Thomas 1979).

Habitat Requirements - Feeding

HABITAT CLASSES: Forages in reproductive habitats.

SPECIFIC HABITAT ELEMENTS: Feeds mainly on insects obtained by subsurface and surface foraging on deciduous and coniferous trees. Also eats small quantities of vegetable matter. In winter feeders are utilized.

Territory/Home Range

In Oregon, territories were 10.1 ha per pair (Thomas 1979).

Activity and Movement Patterns

Diurnal. Adults are generally nonmigratory, but there is local movement southward into valley bottoms during some winters.

Status

Not in jeopardy. Migratory insectivorous bird. Protected by the Migratory Birds Convention Act (1917) and the British Columbia Wildlife Act (1982).

Selected References

Jackman 1974b; Lawrence 1967; Staebler 1949.

Hairy Woodpecker

White-headed Woodpecker
WHWO
Picoides albolarvatus (Cassin)

Distribution, Seasonality and Abundance

Very rare resident in the Okanagan Valley from Naramata south to the International Boundary. Casual north of Naramata to Okanagan Landing, and in the Similkameen Valley. Accidental in the Thompson and East Kootenay valleys.

Habitat Requirements - Reproduction

HABITAT CLASSES: Breeds only in mature and older ponderosa pine parkland from 450 to 600 m elevation.

SPECIFIC HABITAT ELEMENTS: Excavates nesting cavity in living or dead ponderosa pine or Douglas-fir. Nest hole height ranged from 2 to 9 m. Prefers trees with a hard outer shell and soft interior (Grinnell and Storer 1924).

Habitat Requirements - Feeding

HABITAT CLASSES: Forages in ponderosa pine parkland and Douglas-fir - ponderosa pine forests.

SPECIFIC HABITAT ELEMENTS: Forages for insects by searching and scaling pine bark and occasionally flycatching. Feeds extensively on pine seeds but also eats other seeds; feeders are used in urban/residential areas.

Activity and Movement Patterns

Diurnal. Generally nonmigratory.

Status

Indeterminate. Migratory insectivorous bird. Protected by the Migratory Birds Convention Act (1917) and the British Columbia Wildlife Act (1982).

Selected References

Bent 1939; Weber and Cannings 1976.

White-headed Woodpecker

Three-toed Woodpecker
TTWO
Picoides tridactylus (Linnaeus)
[Northern Three-toed Woodpecker, American Three-toed Woodpecker]

Distribution, Seasonality and Abundance

Rare resident throughout most of the Interior of British Columbia, east of the Coast Mountains. Very rare elsewhere.

Habitat Requirements - Reproduction

HABITAT CLASSES: Breeds in coniferous and mixed forested habitats, including black spruce - tamarack bogs, from 550 m to 1700 m elevation. Casual in the Douglas-fir and ponderosa pine forests in the southern Interior (Munro 1919b).

SPECIFIC HABITAT ELEMENTS: Excavates nesting cavity in dead and living coniferous or deciduous trees, with spruce (Engelmann, white and black), lodgepole pine, and trembling aspen the most frequently recorded nest trees. Nests ranged in height from 1 to 25 m; minimum d.b.h. of nest trees was 30.5 cm (Thomas 1979).

Habitat Requirements - Feeding

HABITAT CLASSES: Forages in reproductive habitats.

woodboring insects. Attracted to bark-beetle and spruce borer infestations. Diet items include the wood boring beetle larvae, caterpillars, and small amounts of fruit and soft tree bark. Infrequently forages at sapsucker drillings.

Territory/Home Range

In Oregon, territories were 30.4 ha per pair (Thomas 1979).

Activity and Movement Patterns

Diurnal. Resident but occasionally withdraws from the northern parts of its range into Interior valleys and bottomlands in winter.

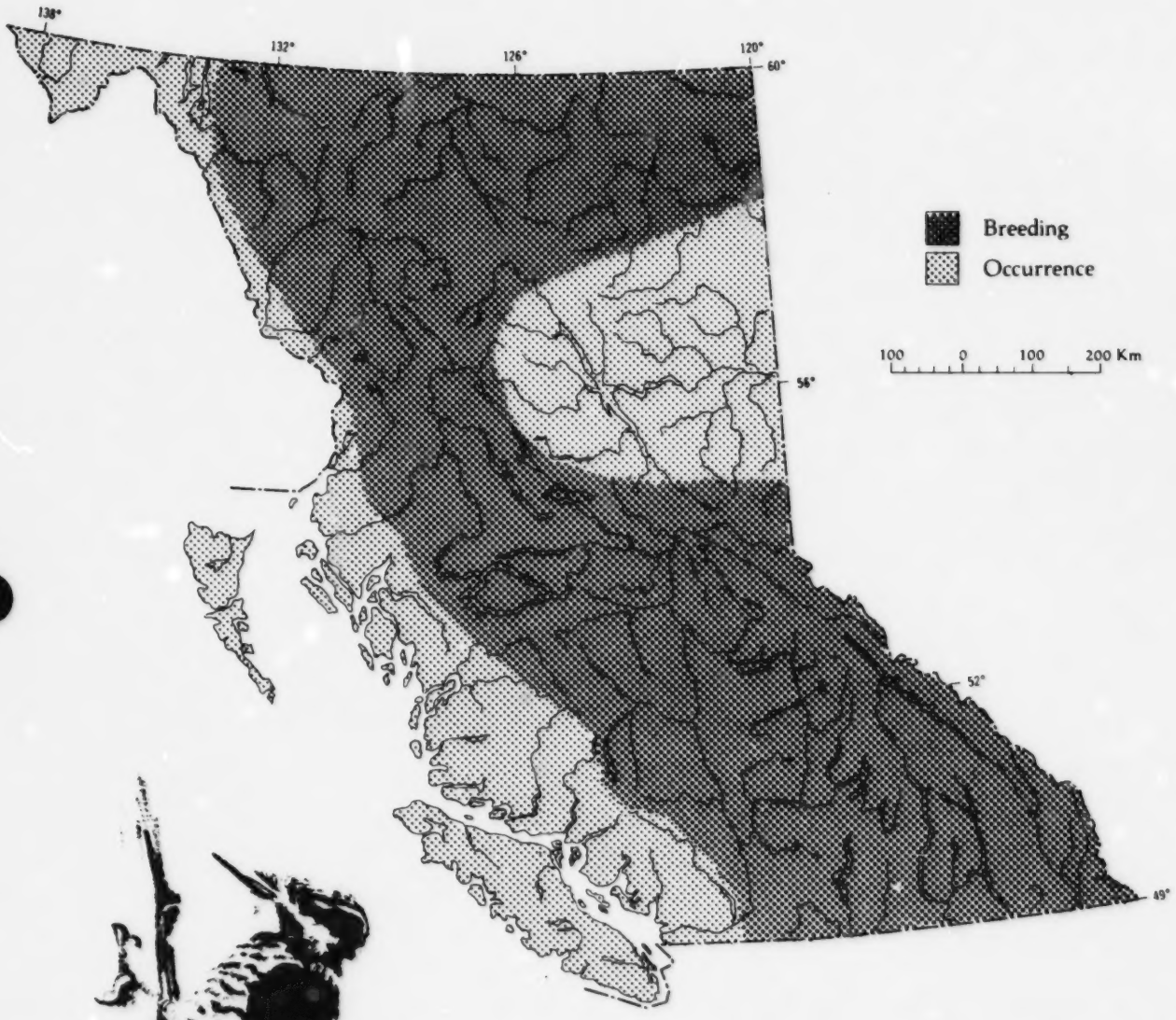
Status

Not in jeopardy. Migratory insectivorous bird. Protected by the Migratory Birds Convention Act (1917) and British Columbia Wildlife Act (1982).

Selected References

Bent 1939; Jackman 1974b; Short 1974.

Three-toed Woodpecker



Northern Flicker
NOFL
Colaptes auratus (Linnaeus)
[Common Flicker, Red-shafted Flicker, Yellow-shafted Flicker]

Distribution, Seasonality and Abundance

Rare to common resident throughout the southern third of the province, including Vancouver Island. Uncommon resident on the Queen Charlotte Islands. Uncommon to rare summer visitant throughout the rest of the province. Winters in southern Interior valleys and on the coast.

Habitat Requirements - Reproduction

HABITAT CLASSES: Breeds in virtually all forested upland habitats from sea level to 2100 m elevation. Prefers open habitat (lodgepole pine forests, birch-willow scrub/parkland, Douglas-fir - ponderosa pine forests, ponderosa pine parklands, trembling aspen forests, riparian forests, sagebrush steppe, southern bunchgrass steppe, and boreal bunchgrass steppe) but will use denser forests if they are associated with open areas, burns, and clearcuts.

SPECIFIC HABITAT ELEMENTS: Nests in existing holes or excavates new ones in both natural and man-made sites. Natural sites included living and dead deciduous and coniferous trees, stumps, and snags and occasionally silt or clay cliffs. Some preference for trembling aspen, lodgepole pine and ponderosa pine, with less preference for cottonwood, Douglas-fir and birches. Man-made sites include fence posts, buildings, power poles, and nest boxes. The d.b.h. of nest trees ranged from 19 to 76 cm. Nest height ranged from 1 to 27 m.

Habitat Requirements - Feeding

HABITAT CLASSES: Forages in reproductive habitats.

SPECIFIC HABITAT ELEMENTS: Forages for insects on the ground in open or semi-open areas and also excavates and probes the surfaces of trees. Occasionally fly-catches. In addition to insects, they eat limited amounts of wild nuts, grains and small fruits. In winter, will also feed on horticultural fruits and at feeders.

Habitat Requirements - Special Needs

SPECIFIC HABITAT ELEMENTS: Cavities are also used for roosting at night and in stormy weather.

Territory/Home Range

In Ontario, territories were 2 to 5 ha with home ranges of 16 ha (Lawrence 1967).

Activity and Movement Patterns

Diurnal. Birds in the northern part of their range are migratory and in winter, are found in southern Interior valleys and on the coast. Spring migration occurs in late April and early May; autumn movement mainly occurs in September.

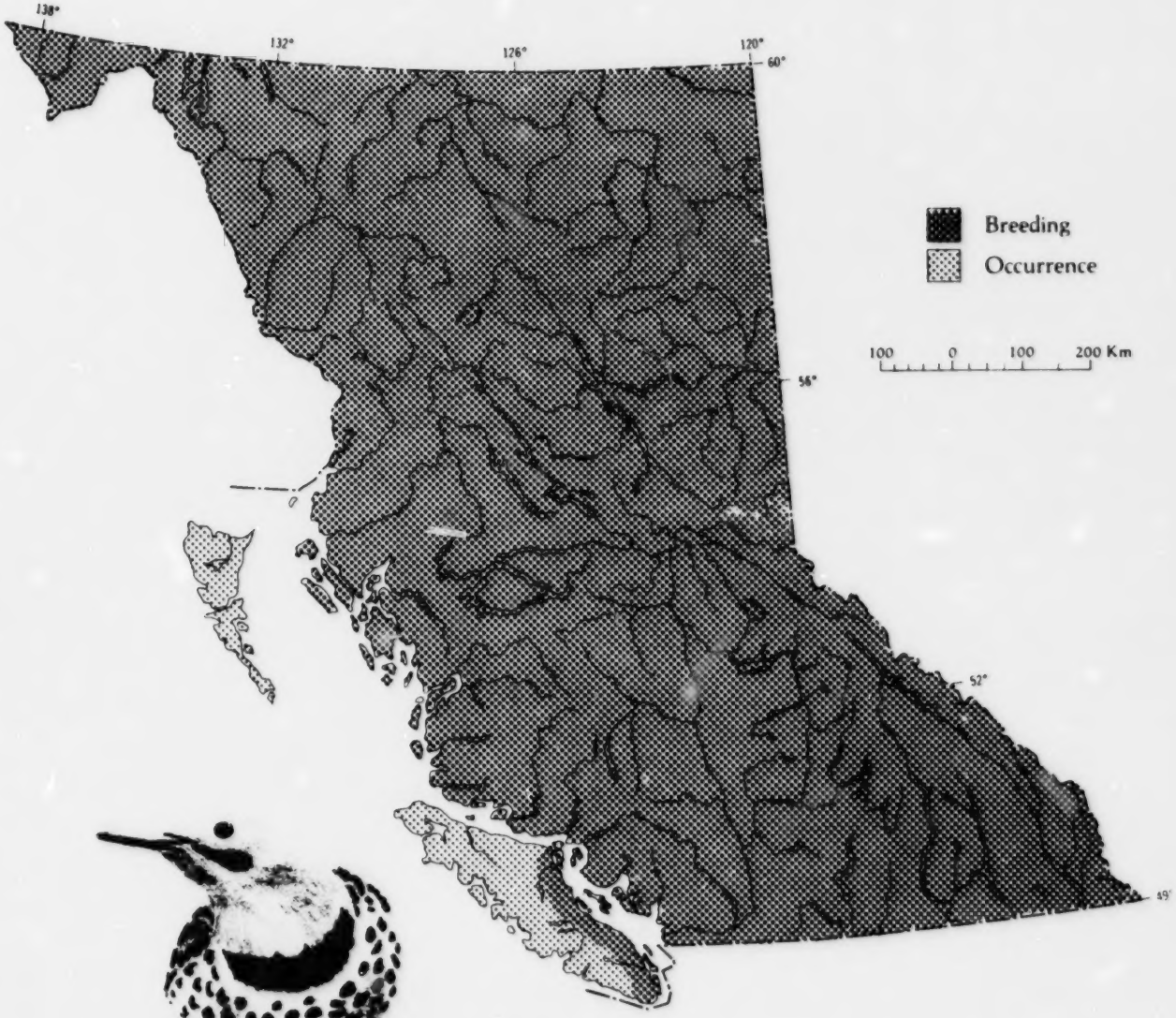
Status

Not in jeopardy. Migratory insectivorous bird. Protected by the Migratory Birds Convention Act (1917) and the British Columbia Wildlife Act (1982).

Selected References

Conner 1973; Kelleher 1963; Lawrence 1967.

Northern Flicker



Pileated Woodpecker
PIWO
Dryocopus pileatus (Linnaeus)

Distribution, Seasonality and Abundance

Uncommon to rare resident in forested areas throughout the southern third of the province. Very rare throughout the remainder of the province.

Habitat Requirements - Reproduction

HABITAT CLASSES: Breeds in mature forested upland habitats, from sea level to 1300 m elevation.

SPECIFIC HABITAT ELEMENTS: Excavates nest cavities in living and dead trees; most nest sites are located in deciduous trees (e.g. trembling aspen and black cottonwood), though some coniferous trees are used. The height of the nests range from 4 to 30 m; minimum d.b.h. of trees must be 50.8 cm (Thomas 1979).

Habitat Requirements - Feeding

HABITAT CLASSES: Forages in reproductive habitats.

SPECIFIC HABITAT ELEMENTS: Forages by excavating decaying standing and fallen trees for insects. Prefers large black ants, a variety of beetles, and occasionally caterpillars. Vegetable food consists of western flowering dogwood, arbutus, mountain-ashes, and Virginia creeper berries. Snags, stumps and logs of any species are suitable for foraging if their diameter is over 18 cm (Bull and Meslow 1977); will forage on the ground. In winter, berries, horticultural fruits, and suet are utilized in urban/residential areas.

Habitat Requirements - Special Needs

SPECIFIC HABITAT ELEMENTS: Several roosting cavities are independently excavated by the male and female and used alternately (Hoyt 1970).

Territory/Home Range

Territories in Oregon were 121 ha (Thomas 1979) and 150-300 ha per pair (Bull and Meslow 1977).

Activity and Movement Patterns

Diurnal. Generally nonmigratory. In winter some local movement to valley bottoms and residential areas.

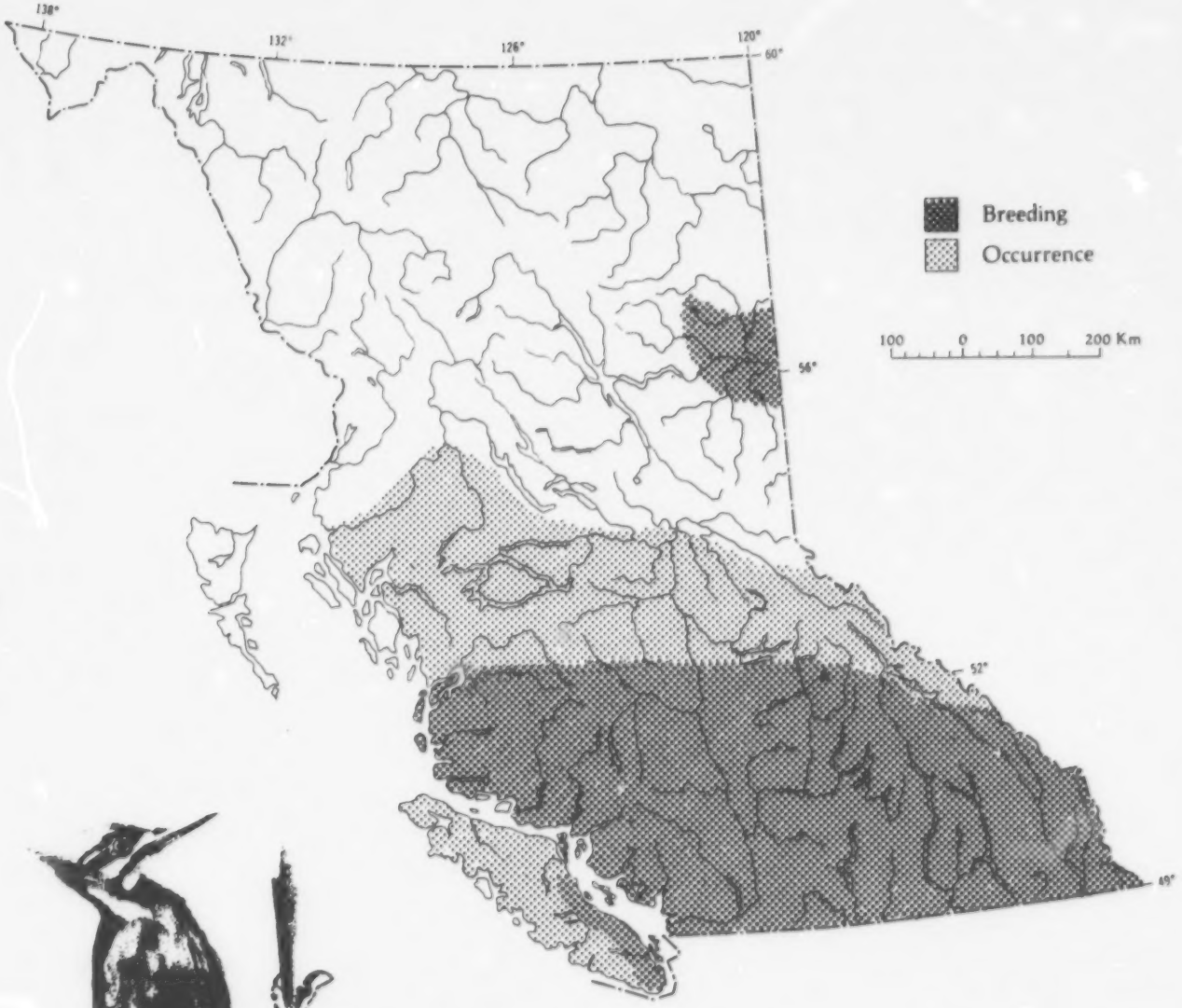
Status

Not in jeopardy. Migratory insectivorous bird. Protected by the Migratory Birds Convention Act (1917) and the British Columbia Wildlife Act (1982).

Selected References

Bent 1939; Bull 1975; Bull and Meslow 1977; Conner 1973.

Pileated Woodpecker



Tree Swallow
TRSW
Tachycineta bicolor (Vieillot)

Distribution, Seasonality and Abundance

Common summer breeder throughout most of province. May occasionally winter on southwest coast.

Habitat Requirements - Reproduction

HABITAT CLASSES: Breeds in a variety of habitats, especially those associated with riparian areas, pond and lake margins, bogs, wet meadows, estuaries, clear cuts, burns and agricultural areas. Boreal mixed aspen sites support large breeding populations. Selection of open over forested habitats.

SPECIFIC HABITAT ELEMENTS: Nests in cavities. Cannot excavate own nest site, so dependent upon other species to provide bulk of cavities. Species of tree and type of cavity unimportant compared to location of nest. Optimal site near water. Nests relatively close to ground; preferred height between 4 m and 7 m (McLaren 1962). In addition to nest boxes and tree, fence post, pole, and building cavities, may use rockfaces, machinery, and other bird nests.

Habitat Requirements - Feeding

HABITAT CLASSES: Forages over a wide variety of forested, nonforested, and aquatic habitats. Most frequently seen hawking for insects over or adjacent to bodies of water. Wetlands such as bogs and fens, as well as agricultural and urban areas provide suitable open spaces for aerial hunting.

SPECIFIC HABITAT ELEMENTS: Forages by hawking for insects; may forage occasionally on ground. Compared to other swallows, eats appreciable quantity of vegetable food. Major diet items include flying insects, ants, beetles, dragonflies, mayflies, grasshoppers, spiders, and occasionally, seeds and berries.

Habitat Requirements - Pattern

Open areas for foraging with some type of adjacent structure for nesting, unobstructed by vegetation.

Territory/Home Range

Not territorial, only cavity defended against other cavity nesters. No estimation of home range.

Activity and Movement Patterns

Diurnal. Migratory. Spring migrants may appear along south coast as early as mid February to mid March. Interior birds may arrive in early March. Autumn migration is evident in late August and is usually over by early September. May occasionally overwinter along southwestern mainland coast.

Status

Not in jeopardy. Migratory insectivorous bird. Protected by the Migratory Birds Convention Act (1917) and the British Columbia Wildlife Act (1982).

Other

Artificial nesting structures have probably increased density and distribution locally of Tree Swallows.

Selected References

Kuerzi 1941; Stocek 1970.

Tree Swallow

Clark's Nutcracker
CLNU
Nucifraga columbiana (Wilson)

Distribution, Seasonality and Abundance

Uncommon resident in the southern third of the province, east of the Coast Mountains. During some years, disperses widely from normal range.

Habitat Requirements - Reproduction

HABITAT CLASSES: Breeds in open or discontinuous coniferous habitats, including interior subalpine parkland, ponderosa pine parkland, Douglas-fir - ponderosa pine forests, and mixed coastal subalpine forests. Suitable breeding habitat largely dependent on presence of preferred tree species and quantity of cones produced.

SPECIFIC HABITAT ELEMENTS: Nests in conifers, frequently sheltered from prevailing winds. Height above ground 2 to 8 m.

Habitat Requirements - Feeding

HABITAT CLASSES: Forages almost exclusively in high mountain coniferous forests with whitebark pine or lower forests with ponderosa pine.

SPECIFIC HABITAT ELEMENTS: Forages in trees and on the ground. May also search bark of trees and fallen logs for insects. Omnivorous, but prefers large coniferous seeds (whitebark pine and ponderosa pine). May also eat seeds of junipers, larches, subalpine fir, Douglas-fir and spruces. Cicadas, crickets, grasshoppers, beetles, ants, bees, wasps, moths, caterpillars, spiders, ticks, grain, and berries are important during times of cone scarcity. Also eats and feeds its young other bird eggs and nestlings.

Habitat Requirements - Pattern

High elevation open conifer stands, with clearings or meadows where snow accumulation limited or melts early for retrieval of cached seeds.

Territory/Home Range

No local information. In Montana, one territory estimated at 0.9 ha (Mewaldt 1956). Frequently seeks food outside territory. May fly up to 22 km from territory to cached seeds.

Activity and Movement Patterns

Diurnal. Some vertical migration from timberline to valley bottom in autumn. During poor cone years, long distance irruptions are evident; high proportion of first year birds in these irruptions.

Status

Not in jeopardy. Protected by the British Columbia Wildlife Act (1982).

Selected References

Fisher and Myres 1980; Goodwin 1976; Mewaldt 1956.

Clark's Nutcracker

Mountain Chickadee
MOCH
Parus gambeli (Ridgway)

Distribution, Seasonality and Abundance

Common resident throughout the province, east of the Coast Mountains, except for the northeastern corner.

Habitat Requirements - Reproduction

HABITAT CLASSES: Breeds in a variety of mixed and coniferous forests, with sparse to moderate canopy closure, including ponderosa pine parklands, Douglas-fir - ponderosa pine forests, trembling aspen forests, and Engelmann spruce - subalpine fir forests. Prefers high elevation, open conifer stands.

SPECIFIC HABITAT ELEMENTS: Nests in tree cavities, often excavating their own nest site in soft, decayed wood. Suitable trees for excavation no smaller than 10 cm d.b.h. (Thomas 1979). Slight preference for deciduous trees, possibly due to earlier decay. Nest height range from 1 - 20 m.

Habitat Requirements - Feeding

HABITAT CLASSES: Forage in a broad range of habitats. More frequently seen foraging in open coniferous forests, but will feed in mixed, deciduous, and riparian forests.

SPECIFIC HABITAT ELEMENTS: Forages by gleaning foliage and twigs high and throughout canopy and probing bark crevices. Primarily insectivorous. Will also eat seeds, nuts and berries. Summer diet mostly caterpillars, moths, beetles, leaf hoppers, tree hoppers, and spiders. In winter, searches bark crevices for hibernating insects, pupae, and egg clusters.

Habitat Requirements - Special Needs

SPECIFIC HABITAT ELEMENTS: Crucial to have enough cavities for roosting and overwintering.

Territory/Home Range

No local information. In Arizona, average territory 1.5 ha; bird wandered up to 1.3 km from this territory in winter (Laudenslayer and Balda 1976).

Activity and Movement Patterns

Diurnal. Nonmigratory. Immature birds may move to lowlands in autumn (Dixon and Gilbert 1964). In autumn, frequently found in mixed species flocks with nuthatches, kinglets, other chickadees, and Brown Creepers.

Status

Not in jeopardy. Migratory insectivorous bird. Protected by the Migratory Birds Convention Act (1917) and the British Columbia Wildlife Act (1982).

Selected References

Bent 1964; Dixon and Gilbert 1964; McLaren 1962.

Mountain Chickadee

Boreal Chickadee
BOCH
Parus hudsonicus Forster

Distribution, Seasonality and Abundance

Uncommon resident at higher elevations throughout the province, except coastal areas.

Habitat Requirements and Reproduction

HABITAT CLASSES: Breeds in a variety of habitats, but usually open conifer dominated stands and edges of more closed forests.

SPECIFIC HABITAT ELEMENTS: Nests in tree cavities, which it may excavate. Selection of trees for nests based on softness of heartwood. No preference for tree species (McLaren 1975), with both deciduous and coniferous trees used. Most nests lower than 3 m (Godfrey 1979). Usually use different nests succeeding years.

Habitat Requirements - Feeding

HABITAT CLASSES: Usually forages in coniferous and mixed wood habitats, as well as deciduous trees and thickets.

SPECIFIC HABITAT ELEMENTS: Forages in high branches and along trunk for caterpillars, treehoppers, leafhoppers, beetles, moth larvae, and spiders. While insects scarce, increased foraging in deciduous species in search of seeds. Winter diet mostly hibernating insects, pupae, and egg clusters.

Habitat Requirements - Special Needs

SPECIFIC HABITAT ELEMENTS: Uses cavities for roosting and overwintering.

Habitat Requirements - Pattern

Relatively open conifer or mixed stands interspersed with meadows.

Territory/Home Range

No local information. In Northwest Territories, in black spruce - tamarack bog habitats, territories were 10 ha (Carbyn 1971).

Activity and Movement Patterns

Diurnal. Nonmigratory. May move to lowlands or southward in extreme winters. In nonbreeding season, often found in mixed flocks of nuthatches, kinglets, and other chickadees.

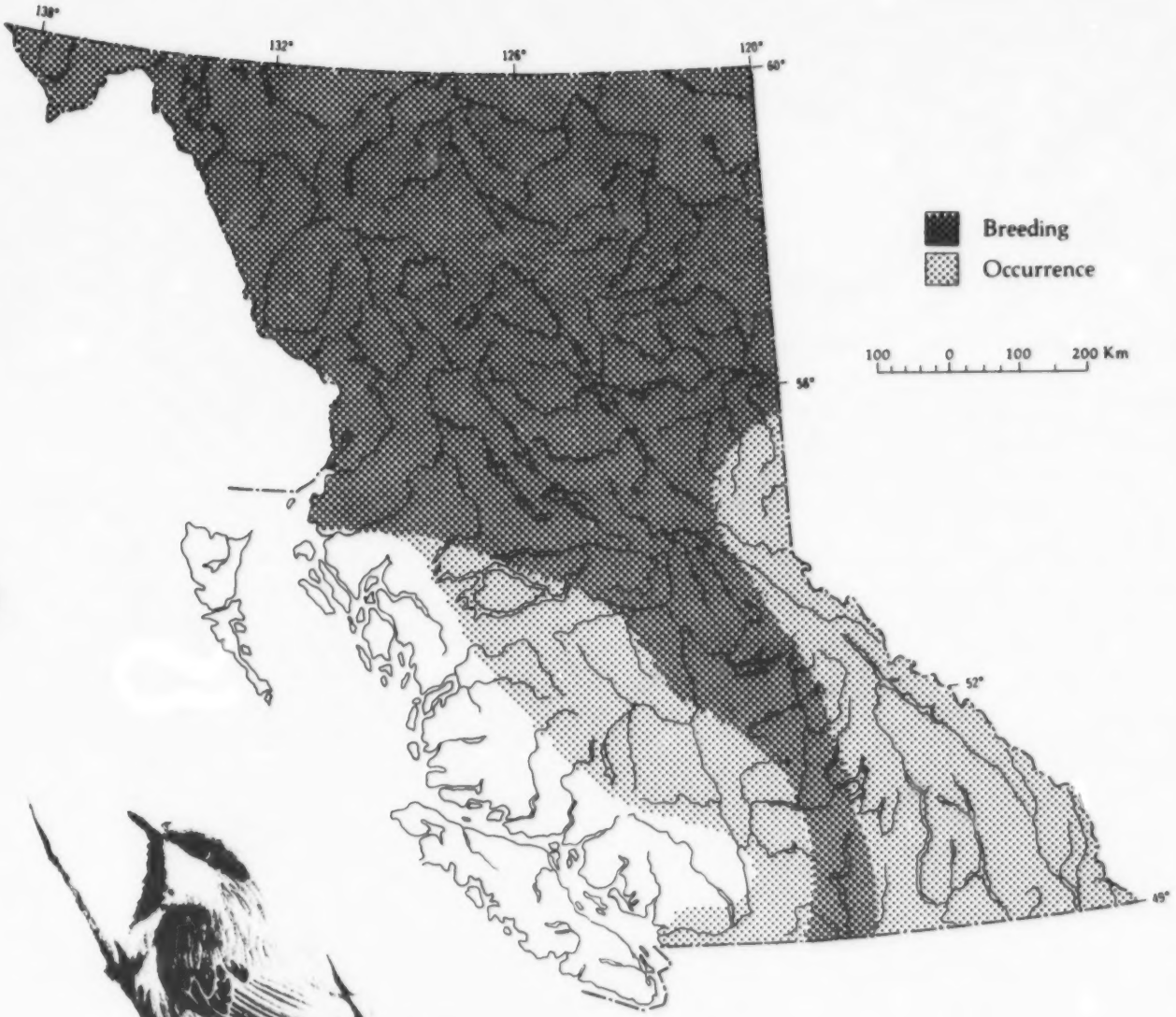
Status

Not in jeopardy. Migratory insectivorous bird. Protected by the Migratory Birds Convention Act (1917) and the British Columbia Wildlife Act (1982).

Selected References

Bent 1964; Godfrey 1979; McLaren 1975.

Boreal Chickadee



Red-breasted Nuthatch
RBNU
Sitta canadensis Linnaeus

Distribution, Seasonality and Abundance

Fairly common resident throughout the province.

Habitat Requirements - Reproduction

HABITAT CLASSES: Breeds in a wide variety of habitats, with a preference for open mature coniferous or mixed stands.

SPECIFIC HABITAT ELEMENTS: Nests are tree cavities. Either excavates its own in living deciduous or dead (coniferous or deciduous) trees, or will use existing holes or nest boxes. Potential nest trees should have d.b.h. of at least 10 cm (Thomas 1979), and wood should be soft and decaying. The average nest height ranged from 1-20 m.

Habitat Requirements - Feeding

HABITAT CLASSES: Forages in reproductive habitats.

SPECIFIC HABITAT ELEMENTS: Most foraging in conifers, with some use of deciduous trees, by gleaning insects from bark, branches, and tips of outer branches. Will sally out for flying insects. Feeds on seeds on Douglas-fir, spruces, and pines, as well as beetles, hymenoptera, spiders, insect eggs, and larvae. Will also forage near ground gleaning weed seeds such as dock and ragweed.

Habitat Requirements - Special Needs

SPECIFIC HABITAT ELEMENTS: Requires cavities for roosting and overwintering.

Territory/Home Range

No local information. In Ontario, Martin (1960) estimated average territory was 0.08 to 1.3 ha.

Activity and Movement Patterns

Diurnal. Generally nonmigratory. May be an altitudinal movement from subalpine forests and a general southward movement from northern parts of its range.

Status

Not in jeopardy. Migratory insectivorous bird. Protected by the Migratory Birds Convention Act (1917) and the British Columbia Wildlife Act (1982).

Selected References

Bent 1948; Scott *et al.* 1977; Winternitz 1976.

Red-breasted Nuthatch

Pygmy Nuthatch
PYNU
Sitta pygmaea Vigors

Distribution, Seasonality and Abundance

Native yearlong resident. Fairly common resident in southern Interior valleys. Casual straggler to the west.

Habitat Requirements - Reproduction

HABITAT CLASSES: Breeds in ponderosa pine parkland and Douglas-fir - ponderosa pine forests; prefers less than 70% canopy closure.

SPECIFIC HABITAT ELEMENTS: Nests in cavities in living and dead ponderosa pine. Excavates own cavity or uses existing holes, including nest boxes. Prefers snags (or decayed living stems) with d.b.h. at least 30.5 cm (Thomas 1979).

Habitat Requirements - Feeding

HABITAT CLASSES: Forages in reproductive habitats.

SPECIFIC HABITAT ELEMENTS: Forages by gleaning in top-most branches, especially terminal needle clusters, cones, and new shoots. Also probes bark surfaces. Summer diet predominantly insects, plus some conifer seeds. Proportions were 80% animal and 20% vegetable (Bent 1948). Likely much of insect food goes to feeding of young. Over entire year, pine seeds are an important component of the diet.

Habitat Requirements - Special Needs

SPECIFIC HABITAT ELEMENTS: Uses cavities for roosting and overwintering.

Territory/Home Range

No local information. California territories ranged from 0.8 to 1.3 ha. Often a threesome (2 males, 1 female) hold a territory, larger than that held by a pair. Territories often include sizeable foraging area; individuals may travel outside of defended territory to prime foraging areas.

Activity and Movement Patterns

Diurnal. Nonmigratory. During winter, often roosts communally, up to 150 birds, for heat conservation (Verner and Boss 1980). Very gregarious; often found in mixed flocks with Mountain Chickadees, other nuthatches, and kinglets.

Status

Not in jeopardy. Migratory insectivorous bird. Protected by the Migratory Birds Convention Act (1917) and the British Columbia Wildlife Act (1982).

Selected References

Bent 1948; Norris 1958; Scott *et al.* 1977.

Pygmy Nuthatch

Brown Creeper
BRCR
Certhia americana Bonaparte

Distribution, Seasonality and Abundance

Uncommon resident, found throughout the southern two-thirds of British Columbia. Rarely encountered north of Stewart.

Habitat Requirements - Reproduction

HABITAT CLASSES: Breeds in a broad variety of habitats over a wide altitudinal range. Prefers extensive mature timber, with closed canopies.

SPECIFIC HABITAT ELEMENTS: Nests in gaps between bark and trunk; will use existing natural cavities. Nest sites range from 1 - 15 m above the ground. Trees should be at least 25 cm d.b.h. for nesting (Thomas 1979).

Habitat Requirements - Feeding

HABITAT CLASSES: Forages in a variety of habitat classes, including mature coniferous or deciduous stands. Also forage on shade and fruit trees in residential areas.

SPECIFIC HABITAT ELEMENTS: Forages by gleaning food from bark surfaces and probing crevices; forages up trunks and along branches (upright or hanging). Almost exclusively insectivorous; feeds on weevils, leaf beetles, caterpillars, moths, plant lice, leaf hoppers, scale insects, and eggs and larvae of many insects. May also eat seeds.

Habitat Requirements - Special Needs

SPECIFIC HABITAT ELEMENTS: Requires roosts in natural and man-made hollows, often communal, in non-breeding seasons.

Territory/Home Range

No local information. Territories in Michigan ranged from 2.3 - 6.4 ha (Davis 1978).

Activity and Movement Patterns

Diurnal. Generally nonmigratory. May descend from mountains and may also withdraw from northern areas in severe winters.

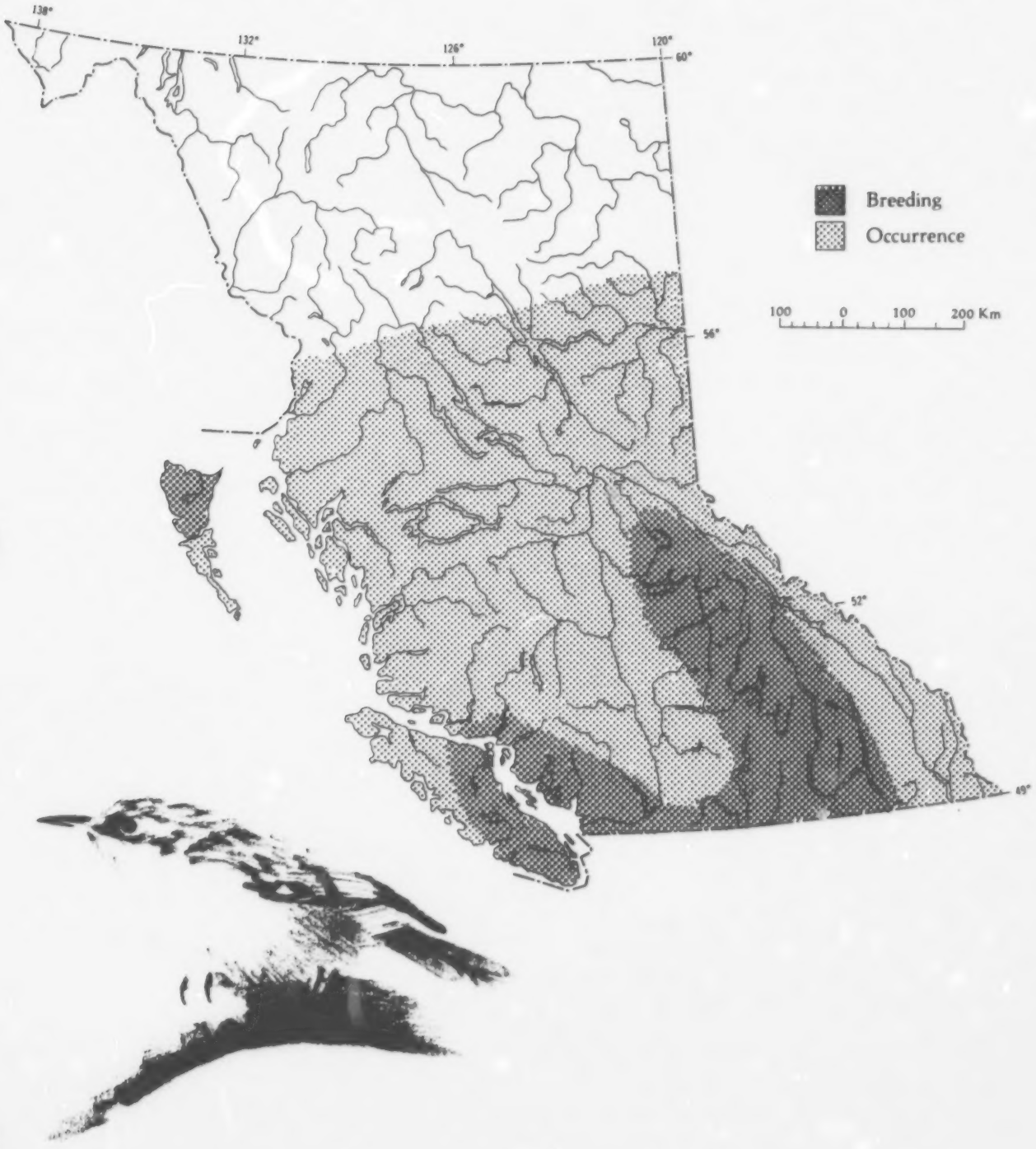
Status

Not in jeopardy. Migratory insectivorous bird. Protected by the Migratory Birds Convention Act (1917) and the British Columbia Wildlife Act (1982).

Selected References

Bent 1948; Davis 1978.

Brown Creeper



Mountain Bluebird
MOBL
Sialia currcoides (Bechstein)

Distribution, Seasonality and Abundance

Uncommon to common breeder throughout the province east of the Coast Mountains, except the northeastern corner of British Columbia. Casual in winter in the south.

Habitat Requirements - Reproduction

HABITAT CLASSES: Breeds in a wide range of semi-open habitats, near sea level to alpine. Frequents farmlands, orchards, sagebrush and bunchgrass steppe, forest edges, ponderosa pine parklands, trembling aspen forests, burns or clearcuts, and subalpine meadows.

SPECIFIC HABITAT ELEMENTS: Nests in tree cavities in almost any location near open areas. Prefers deep cavities, with medium to large openings. Cannot excavate own hole. Readily uses nest boxes. Natural nest sites range from 0.3 to 16 m in height above ground; minimum d.b.h. is 25 cm (Thomas 1979).

Habitat Requirements - Feeding

HABITAT CLASSES: Forages in nonforested habitats.

SPECIFIC HABITAT ELEMENTS: Forages by gleaning food from foliage, sallying for flying insects, and hovering low and stooping upon prey. Primarily insectivorous; proportions about 90% invertebrate and 10% small fruit.

Territory/Home Range

No local information. One individual foraged over a circular home range of almost 2.7 ha (Verner and Boss 1980). Intrusions of one bird into another territory rare (Power 1966).

Activity and Movement Patterns

Diurnal. Migratory. Spring migration commences in late March, occurring mainly in April throughout the province. Autumn migration occurs mainly from late September to mid October.

Status

Not in jeopardy. Migratory insectivorous bird. Protected by the Migratory Birds Convention Act (1917) and the British Columbia Wildlife Act (1982).

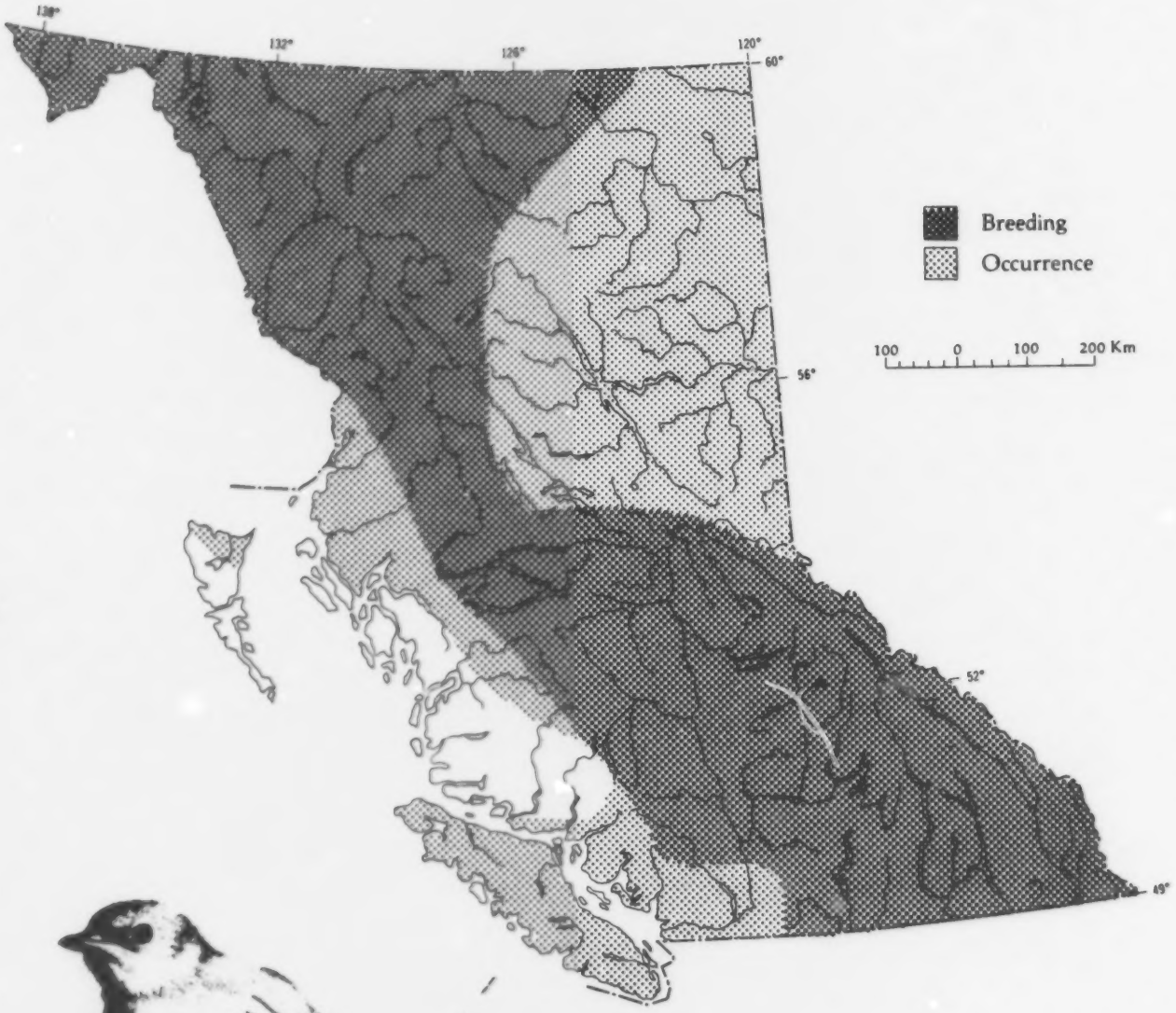
Other

Extensive use of nest box "trails" in open rangelands throughout the province has contributed to maintaining viable breeding populations.

Selected References

Bent 1949; Power 1966; Scott *et al.* 1977.

Mountain Bluebird



Hermit Thrush
HETH
Catharus guttatus (Pallas)

Distribution, Seasonality and Abundance

Common breeder throughout the province, especially in mountainous areas. Very rare in winter along the southwest coast.

Habitat Requirements - Reproduction

HABITAT CLASSES: Breeds in coniferous and mixed forests with open canopies or margins of closed forests. Commonly in Engelmann spruce - subalpine fir, Douglas-fir - lodgepole pine, wet interior spruce and boreal spruce - trembling aspen forests, subalpine parkland, trembling aspen forests, and residential areas in the Interior; uses most coniferous habitats along the coast. Nests from sea level to 3000 m.

SPECIFIC HABITAT ELEMENTS: Usually nests in tree branches, with nest placed beneath thinnest portion of canopy or along forest edges. Areas of forest floor covered in dense herb growth usually avoided (Morgan 1984). Occasionally, nests on the ground or in cutbanks. Nest sites range from ground level to 7 m.

Habitat Requirements - Feeding

HABITAT CLASSES: Forages in reproductive habitats. During migration and for overwintering birds, deciduous and mixed wood thickets and sandy, coastal beaches are important foraging areas.

SPECIFIC HABITAT ELEMENTS: Forages primarily on the ground, searching for animal prey. Mainly insectivorous. Diet elements include ants, termites, beetles, weevils, moths, flies, caterpillars, sowbugs, spiders, small marine crustaceans, tiny frogs, and salamanders as well as seeds, fruit, and berries.

Territory/Home Range

No local information. In Ontario, territories ranged from 0.006 - 3.4 ha (Martin 1960); in Nova Scotia, territories ranged from 0.2 to 1.2 ha (Morgan 1984).

Activity and Movement Patterns

Diurnal. Migratory. Spring migration commences in March, but most arrive in April and early May. Autumn migration commences from late September to mid October.

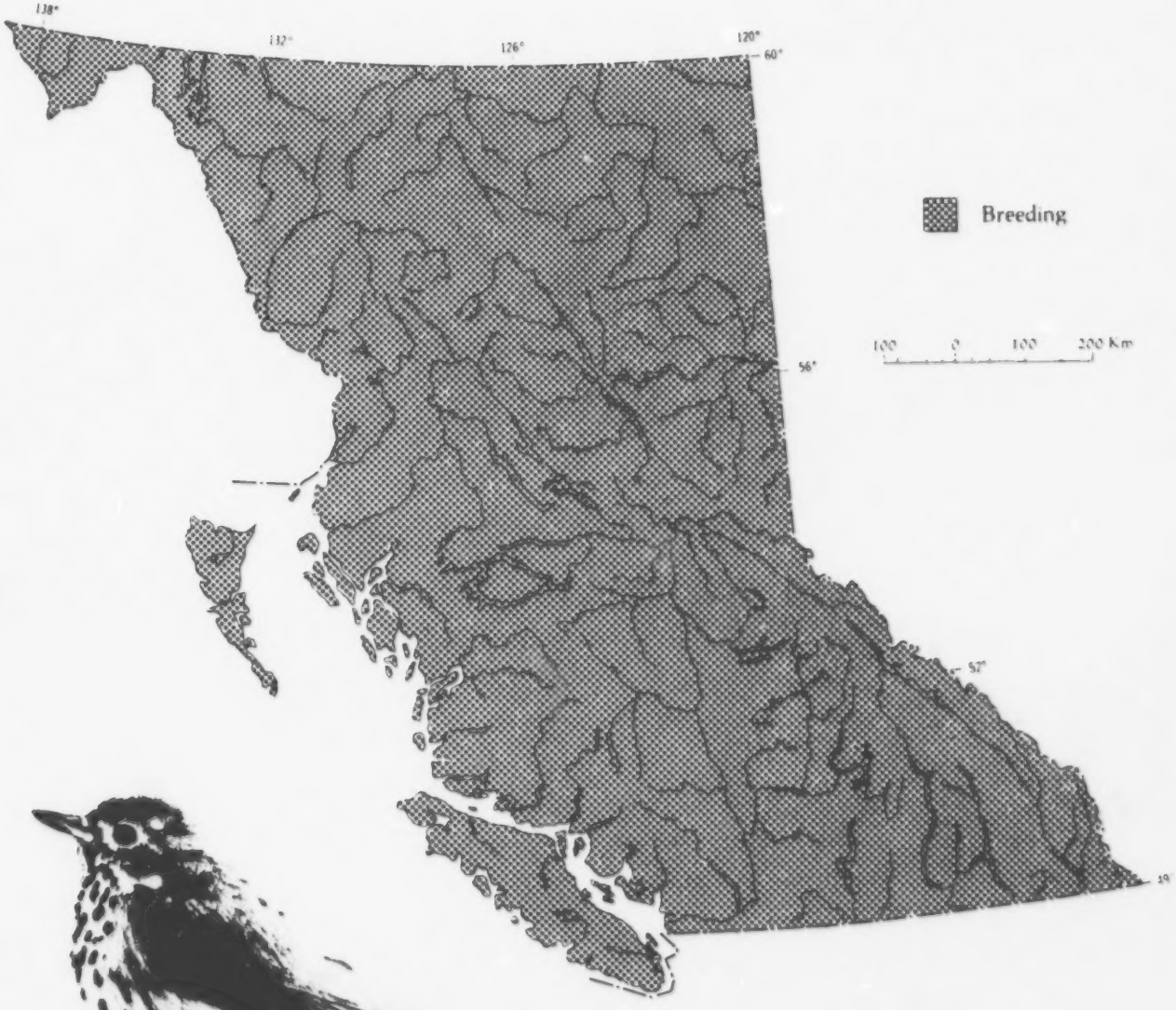
Status

Not in jeopardy. Migratory insectivorous bird. Protected by the Migratory Birds Convention Act (1917) and the British Columbia Wildlife Act (1982).

Selected References

Dilger 1956; Sealey 1974.

Hermit Thrush



Varied Thrush
VATH
Ixoreus naevius (Gmelin)

Distribution, Seasonality and Abundance

Common resident throughout the province, except in the extreme northeastern corner.

Habitat Requirements - Reproduction

HABITAT CLASSES: Breeds primarily in moist, dense, mature coniferous forests with well established tree regeneration and low light levels. Also, will breed in mixed and deciduous forests, especially in shaded riparian areas, with sparse herb or low shrub undergrowth.

SPECIFIC HABITAT ELEMENTS: Primarily nests in coniferous trees, with frequent use of deciduous trees and shrubs and occasionally in dead trees or rock faces. Nest sites range from 1 to 8 m above ground.

Habitat Requirements - Feeding

HABITAT CLASSES: Forages in reproductive habitats, especially in those lacking thick shrub, herb, or moss layers where soil has a high humus content and good crumbly structure. During migration and winter, frequents urban gardens, agricultural areas, and forest edges.

SPECIFIC HABITAT ELEMENTS: Forages typically on the ground, but will glean from foliage and fruiting stems of trees. Diet elements include small wild fruit and seeds from such plants as blackberries, mountain-ashes, honeysuckles, apples, junipers, arbutus, weed seeds, insects, spiders, snails, and other invertebrates. The diet is comprised mostly of vegetable matter, with the rest comprised of invertebrates.

Territory/Home Range

No information available.

Activity and Movement Patterns

Diurnal. Generally nonmigratory, except in northern parts of its range. A spring movement is evident in April; the autumn movement occurs from mid September to late October.

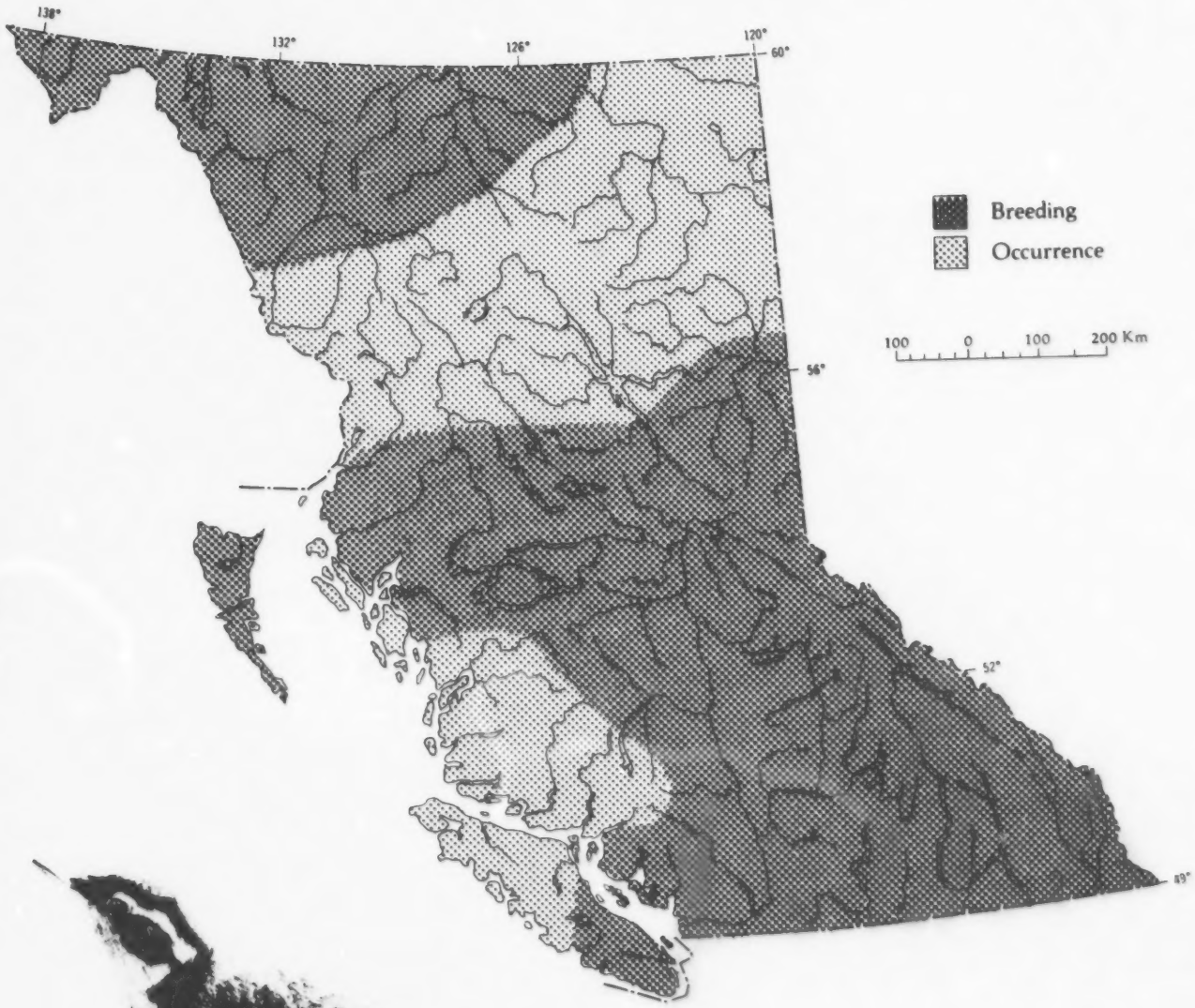
Status

Not in jeopardy. Migratory insectivorous bird. Protected by the Migratory Birds Convention Act (1917) and the British Columbia Wildlife Act (1982).

Selected References

Bent 1949; Horvath 1963; Whitney 1979.

Varied Thrush



Sage Thrasher
SATH
Oreoscoptes montanus (Townsend)

Distribution, Seasonality and Abundance

Rare local breeder in the extreme south-central area of the province. Stragglers have been recorded to the west.

Habitat Requirments - Reproduction

HABITAT CLASSES: Breeds in sagebrush steppe and associated talus shrublands.

SPECIFIC HABITAT ELEMENTS: Nest site usually in sagebrush or occasionally on ground. Possibly important to maintain a certain vegetation density above and around nest, for wind protection, shading or heat loss (at night) (Rich 1980). Nest site ranges from 0.1 to 3 m above ground.

Habitat Requirements - Feeding

HABITAT CLASSES: Forages in reproductive habitats, as well as in cultivated fields and gardens near nesting areas.

SPECIFIC HABITAT ELEMENTS: Majority of foraging occurs on ground; may also sally from ground after flying insects. Feeds on grasshoppers, crickets, wasps, berries, currants, gooseberries, blackberries, and other small fruit (Bent 1948). Often forages well away from nest site.

Territory/Home Ranges

Southern Okanagan territories estimated to be approximately 2 ha. (Cannings *et al.* 1987).

Activity and Movement Patterns

Diurnal. Migratory. Spring migration occurs in May; autumn migration occurs from late August to early September.

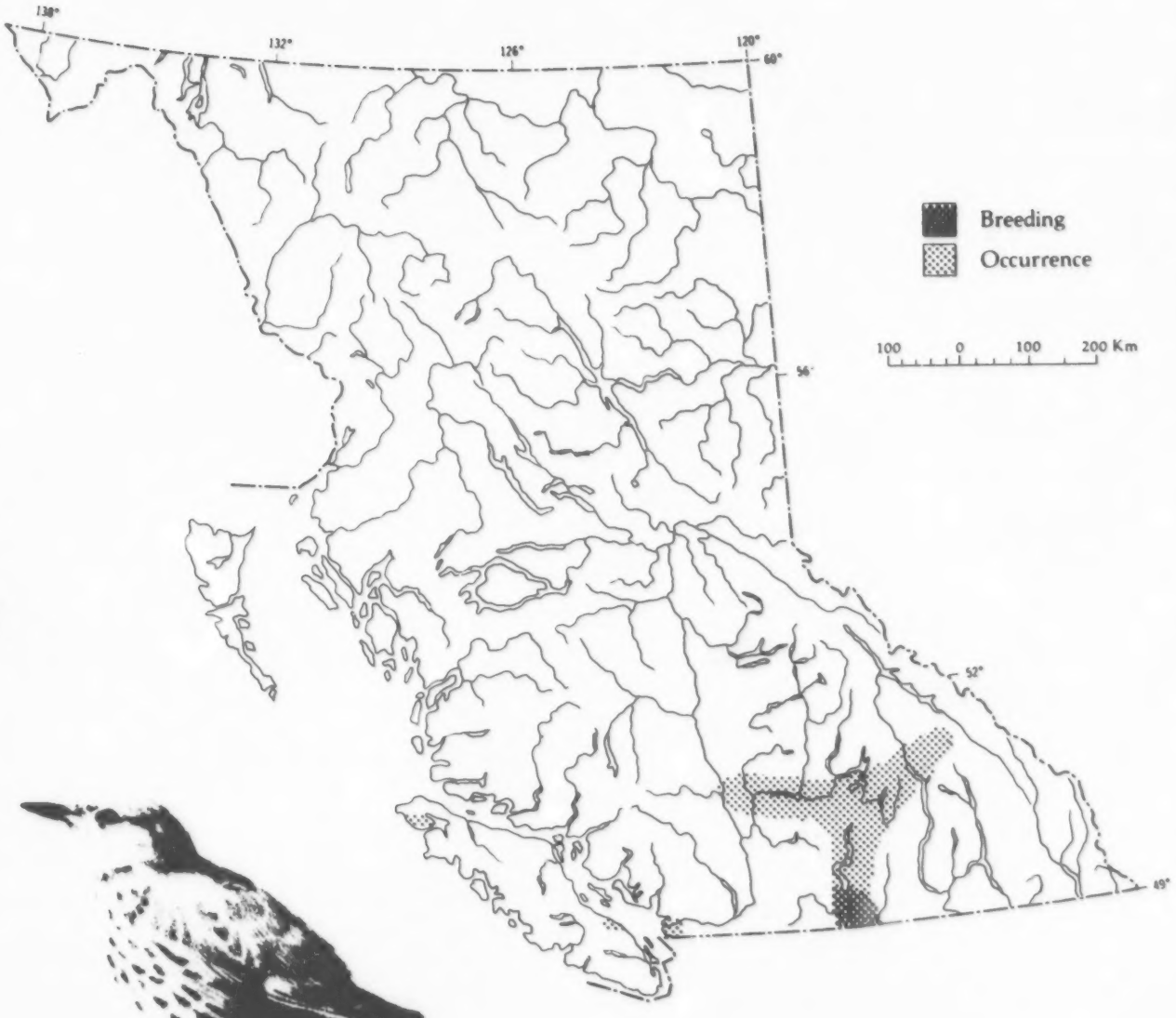
Status

Peripheral; of management concern. Migratory insectivorous bird. Protected by the Migratory Birds Convention Act (1917) and the British Columbia Wildlife Act (1982).

Selected References

Bent 1948; Cannings *et al.* 1987; Rich 1980.

Sage Thrasher



Bohemian Waxwing
BOWA
Bombycilla garrulus (Linnaeus)

Distribution, Seasonality and Abundance

Common resident throughout the province, east of the Coast Mountains. Centre of abundance is in northern areas; infrequently occurs along central and southern coastal areas.

Habitat Requirements - Reproduction

HABITAT CLASSES: Breeds in coniferous and mixed forested habitats, including white spruce - subalpine fir forests, boreal white spruce forests, boreal spruce - aspen mixed forests, interior subalpine parkland, Engelmann spruce - subalpine fir forests, trembling aspen forests, subalpine fir - birch forests, Sitka spruce forests, black spruce - tamarack bogs, riparian forests, and urban areas.

SPECIFIC HABITAT ELEMENTS: Nests primarily in conifers, from 0.5 to 8 m above ground.

Habitat Requirements - Feeding

HABITAT CLASSES: Forages in reproductive habitats, especially wetlands, clearings, and early successional areas. In the nonbreeding season, frequently forages in lowland areas, including agricultural areas, orchards and vineyards, clearcuts, and urban/residental areas.

SPECIFIC HABITAT ELEMENTS: Forages by searching along tree branches, gleaning prey from foliage, and by sallying for flying insects from perches. Insectivorous in spring and early summer, until small fruit ripens and dominates diet. Eats raspberries, blueberries, cranberries, kinnikinnick, choke cherry, Pacific crab apple, western flowering dogwood, and mountain-ashes. Also feeds on sap flowing from trees. Late hanging fruit such as mountain-ashes, junipers, Pacific crab apple, western flowering dogwood, roses, and arbutus are important winter foods.

Habitat Requirements - Pattern

Open coniferous forests adjacent to either wetland habitats rich in flying insects and berries, or early successional upland sites supporting abundant fruiting shrubs and trees.

Territory/Home Range

No information available.

Activity and Movement Patterns

Diurnal. Nonmigratory but irruptive; in some years, major dispersal from northern areas. General annual altitudinal shift in late autumn is common.

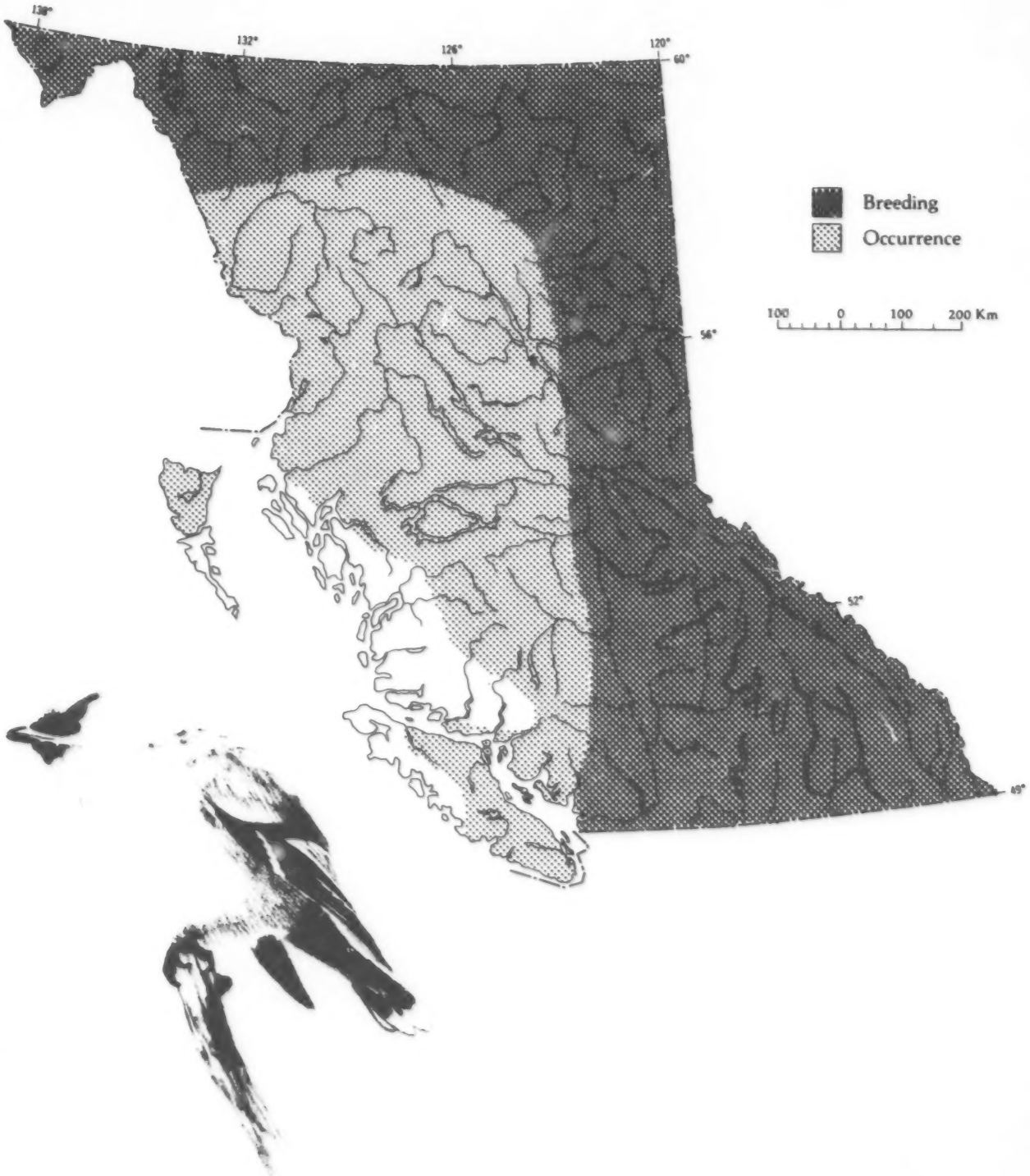
Status

Not in jeopardy. Migratory insectivorous bird. Protected by the Migratory Birds Convention Act (1917) and the British Columbia Wildlife Act (1982).

Selected References

Trimble 1975.

Bohemian Waxwing



Yellow-rumped Warbler
YRWA
Dendroica coronata (Linnaeus)
[Audubon's Warbler,
Myrtle Warbler]

Distribution, Seasonality and Abundance

Abundant breeder throughout the province. Small numbers winter along the southwestern coast.

Habitat Requirements - Reproduction

HABITAT CLASSES: In northern areas, breeds commonly in mixed coniferous and deciduous forests such as black spruce forests, boreal white spruce forests, lodgepole pine forests, and trembling aspen forests. In southern areas, breeds in various coniferous forests up to subalpine; also in deciduous thickets, mixed forests, and edges. Prefers areas somewhat open, with low canopy cover, but will use most successional stages.

SPECIFIC HABITAT ELEMENTS: Adaptable; nests in a wide variety of nesting substrates, including conifers, deciduous trees, and shrubs. Nest heights ranged from 1 to 25 m above the ground.

Habitat Requirements - Feeding

HABITAT CLASSES: Forages in lower to mid canopy of coniferous and deciduous trees; prefers open forest canopies and edges. In migration, frequents deciduous woods, shrub thickets, forest edges, cultivated fields and residential areas.

SPECIFIC HABITAT ELEMENTS: Forages by gleaning foliage; frequently sallies out from a perch after flying insects. Often seen foraging on ground. Insects account for most of the summer diet; may eat fleshy fruit. In winter, vegetable matter, which consists of berries and seeds, is of greater importance.

Territory/Home Range

No local information. In Ontario, territories ranged from 0.05 to 1.8 ha (Martin 1960); in Nova Scotia, territories ranged from 0.2 to 0.5 ha (Morgan 1984).

Activity and Movement Patterns

Diurnal. Most are long distance migrants. Spring migration commences in late March in the south, and carries through to early May in the north. Autumn migration occurs mainly in September and early October.

Status

Not in jeopardy. Migratory insectivorous bird. Protected by the Migratory Birds Convention Act (1917) and the British Columbia Wildlife Act (1982).

Selected References

Hubbard 1969; Mengel 1964.

Yellow-rumped Warbler

Townsend's Warbler
TOWA
Dendroica townsendi
(Townsend)

Distribution, Seasonality and Abundance

Common breeder in western and southern British Columbia. Small numbers winter on the southwest coast.

Habitat Requirements - Reproduction

HABITAT CLASSES: Breeds in conifer-dominated forest habitats with open to dense canopy closure, as well as forest edges and in shrubby thickets. A characteristic breeder of multiple canopy, mature and old-growth true fir and mixed conifer stands.

SPECIFIC HABITAT ELEMENTS: Nests in both deciduous and coniferous trees, from near ground to upper reaches of canopy.

Habitat Requirement - Feeding

HABITAT CLASSES: Forages primarily in upper canopy of conifer stands, but will descend into suppressed understory to hunt. During migration may exploit deciduous woods and shrubby thickets, especially those containing alders and birches.

SPECIFIC HABITAT ELEMENTS: Forages by gleaning foliage. Almost entirely insectivorous. May eat fleshy fruit.

Territory/Home Range

No information.

Activity and Movement Patterns

Diurnal. Most are migratory; some winter as far south as Nicaragua. Spring movement occurs from early April to mid May; autumn departure from mid August to late September.

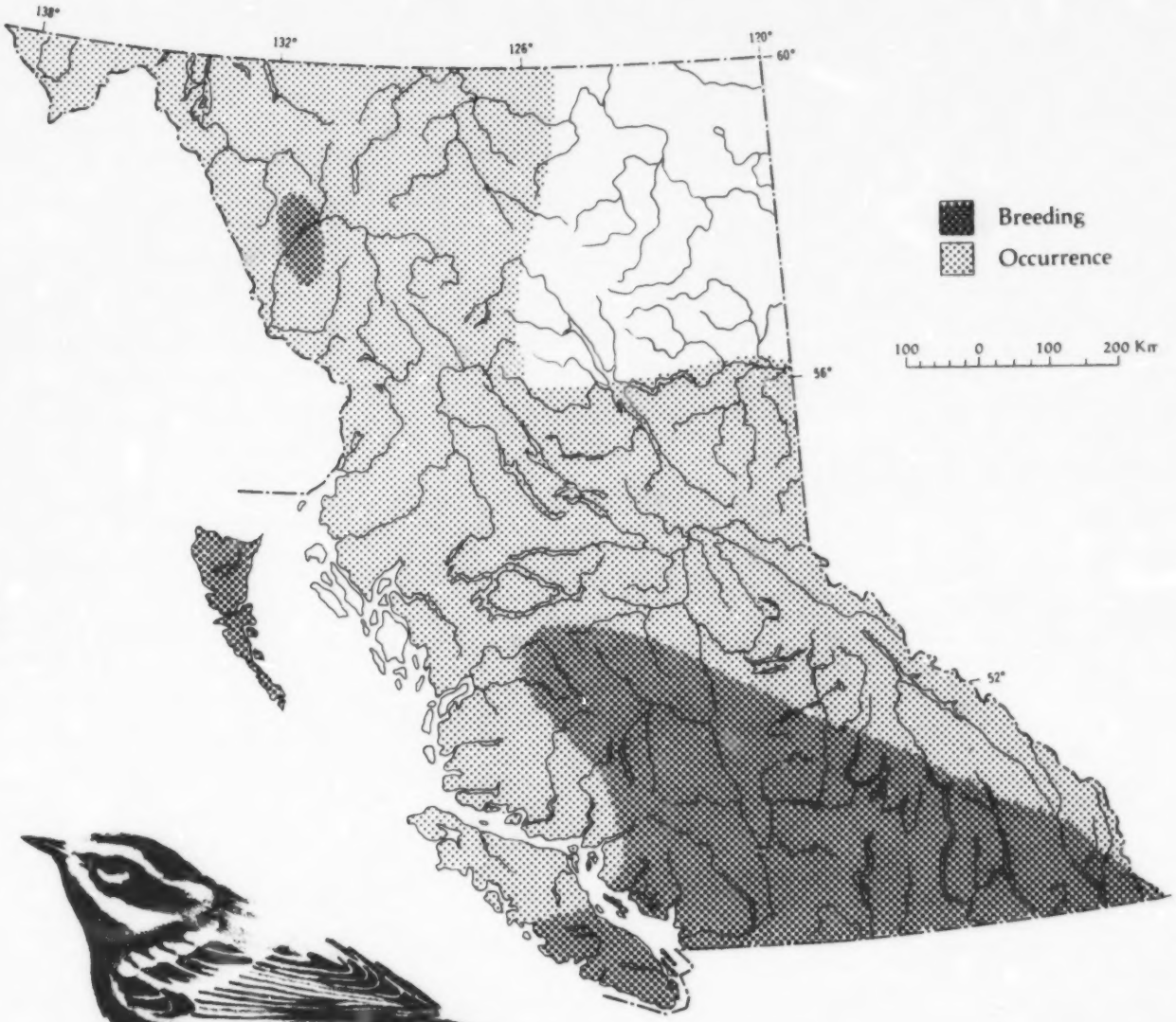
Status

Not in jeopardy. Migratory insectivorous bird. Protected by the Migratory Birds Convention Act (1917) and the British Columbia Wildlife Act (1982).

Selected References

Bent 1963;, Horvath 1963; Mengal 1964; Morrison 1983; Wetmore *et al.* 1985.

Townsend's Warbler



Brewer's Sparrow
BRSP
Spizella breweri Cassin

Distribution, Seasonality and Abundance

Uncommon to common, local breeder. Three disjunct breeding areas occupied by two subspecies. Southern subspecies restricted to dry slopes and valley bottoms of southern Interior. Other subspecies found mostly in either northwest corner or in mountains of southeastern British Columbia, south to the International Boundary.

Habitat Requirements - Reproduction

HABITAT CLASSES: Restricted to sagebrush steppe in the south Okanagan, on open sites with abundant sagebrush and patches of grass or in clumps of stunted subalpine fir, spruces, willows, or birches.

SPECIFIC HABITAT ELEMENTS: In the southern Interior, nests in sagebrush at least 50 cm tall, but will also nest in low birches, trembling aspen, and junipers. Nest height ranged from ground level to 2 m. In the north, nests are built in tall willows, stunted conifers, and dense clumps of birches.

Habitat Requirements - Feeding

HABITAT CLASSES: Forages in reproductive habitats.

SPECIFIC HABITAT ELEMENTS: Forages by gleaning ground vegetation and low foliage. Diet is comprised of weed seeds and insects.

Territory/Home Range

In the south Okanagan, territories are approximately 0.4 - 0.5 ha, semi-colonial (Cannings *et al.* 1987). Schroeder and Sturges (1975) suggest larger territories to 1 ha. Northern territories are larger, ranging from 2.0 - 2.4 ha (Bent 1968).

Activity and Movement Patterns

Diurnal. Long distance migrants. In the southern Interior, spring migrants arrive late April to early May; autumn migration occurs from late August to early September. In the north, spring migrants arrive in late May and leave in August.

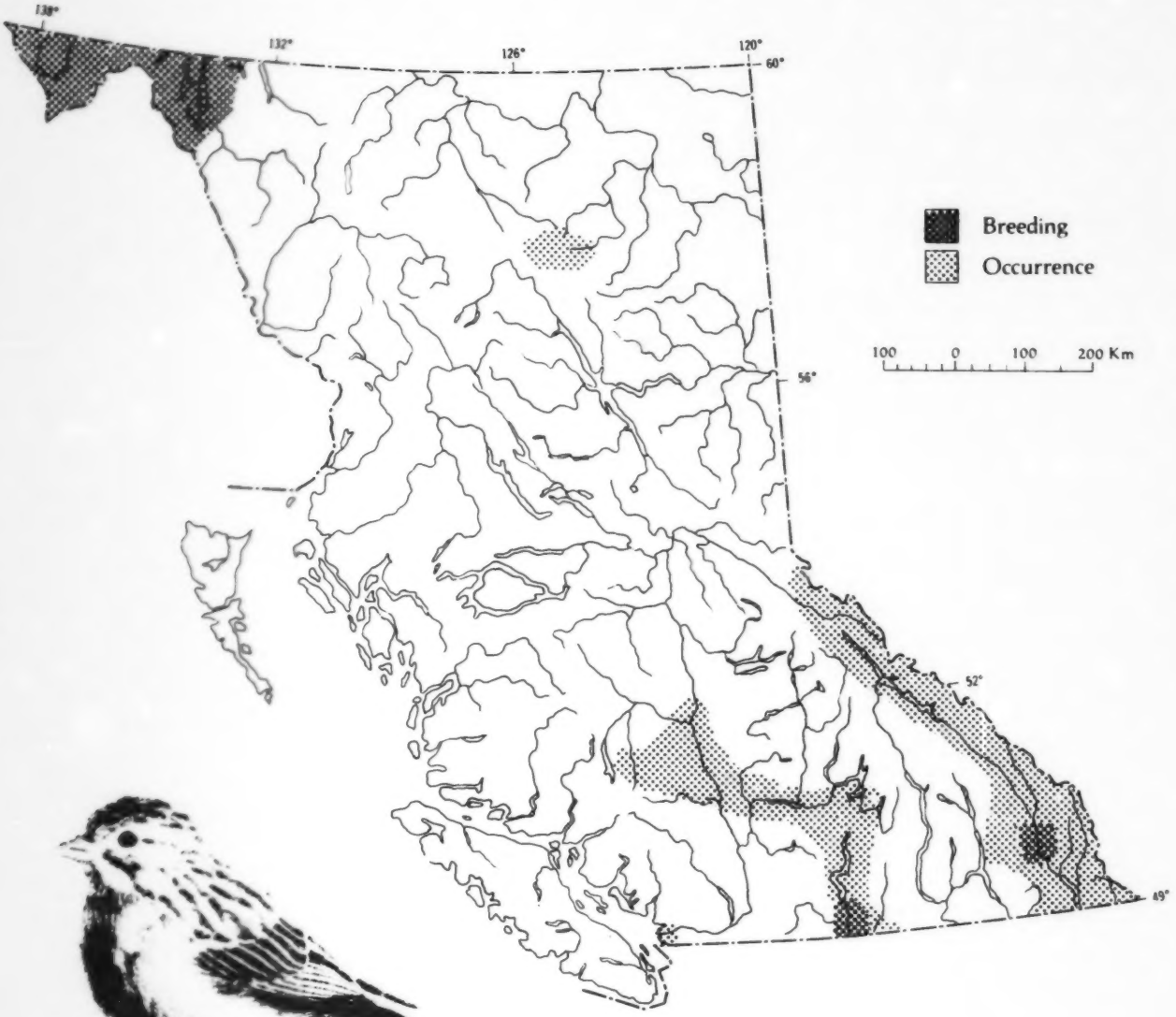
Status

Not in jeopardy. Migratory insectivorous bird. Protected by the Migratory Birds Convention Act (1917) and the British Columbia Wildlife Act (1982).

Selected References

Bent 1968; Best 1972; Cowan 1946; Campbell and Meugens 1971; Schroeder and Sturges 1975.

Brewer's Sparrow



Song Sparrow
SOSP
Melospiza melodia (Wilson)

Distribution, Seasonality and Abundance

Common resident in coastal British Columbia, including Queen Charlotte Islands and Vancouver Island. Very common breeder in the rest of the province, except in the northern third where it is less common.

Habitat Requirements - Reproduction

HABITAT CLASSES: Breeds from coastal beaches to near timberline, but more common below 1000 m. Preferred habitats provide either dense, relatively low vegetation or a higher canopy of widely spaced trees. Narrow bands of vegetation preferable to unbroken, extensive tracts of shrubs. Habitats that provide such arrangements include borders of farmlands, cultivated fields, orchards, brushy road margins, and edges of ponds, lakes, and streams. Edges of conifer, deciduous, or mixed forests, deciduous riparian, and fresh emergent wetland habitats provide abundant breeding areas.

SPECIFIC HABITAT ELEMENTS: Most nests located along or close to edge of shrubbery. Nests either directly on the ground, in tufts of high grasses or weeds, somewhat elevated, or supported by woody vegetation. Nests may also be placed in cutbanks and downed tree roots. Nest heights range to 2.5 m.

Habitat Requirements - Feeding

HABITAT CLASSES: Forages in reproductive habitat.

SPECIFIC HABITAT ELEMENTS: Predominantly a ground forager near and under shrubbery, but will feed in shrubs and small trees. Readily sallies for flying insects. Omnivorous. Eats grass and weed seeds, blackberries, saskatoon berries, and ocean-spray flowers, as well as flies, mayflies, and caterpillars.

Habitat Requirements - Patterns

Elongated strips of low, shrubby vegetation, adjacent to fields and clearings. Presence of scattered trees or tall shrubs for song posts and proximity to water typical.

Territory/Home Range

In southern British Columbia, territories ranged from 0.01 to 0.04 ha (Tompa 1963). In Ontario, territories ranged from 0.08 to 1.0 ha (Martin 1960); in Nova Scotia, from 0.25 to 1.3 ha (Morgan 1984); and in Ohio, from 0.2 to 0.6 ha (Nice 1943). Home ranges from 0.6 ha to 3.6 ha (Butts 1927; Fitch 1958).

Activity and Movement Patterns

Diurnal. Generally migratory in northern parts of its range. In southern areas altitudinal migration in autumn and winter into lowland areas. Nonmigratory along the coast.

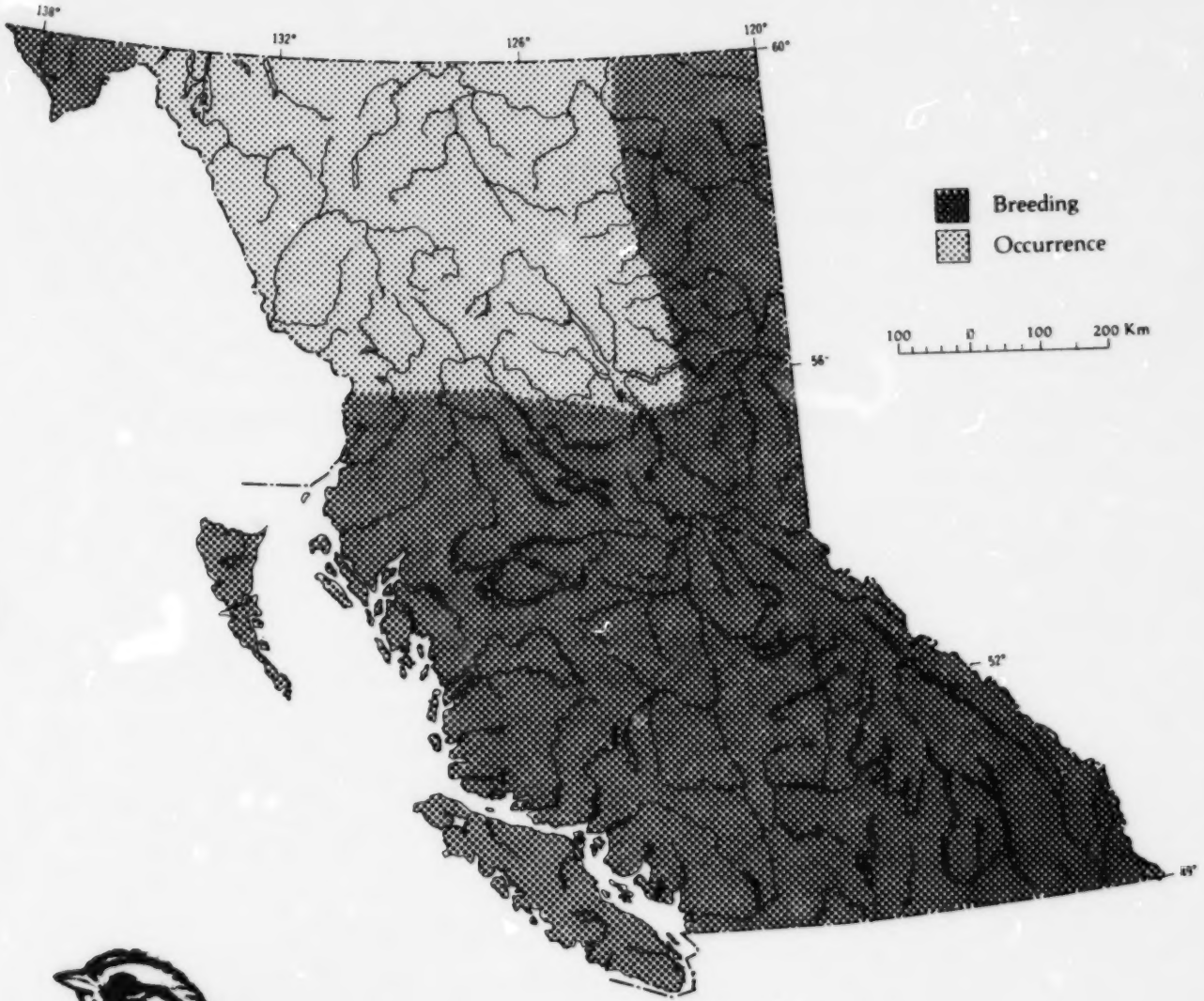
Status

Not in jeopardy. Migratory insectivorous bird. Protected by Migratory Birds Convention Act (1917) and the British Columbia Wildlife Act (1982).

Selected References

Knapton 1973; Knapton and Krebs 1974; Tompa 1963.

Song Sparrow



Lincoln's Sparrow
LISP
Melospiza lincolnii (Audubon)

Distribution, Seasonality and Abundance

Uncommon breeder throughout most of the province, except southwestern portions. A few winter along the southwest coast, including Vancouver Island.

Habitat Requirements - Reproduction

HABITAT CLASSES: Breeds in wetland habitats, such as open moist meadows, bogs, and marshes, muskeg with scattered clumps of low brush, lakeside and streamside thickets, in clearcuts with abundant slash, and forest edges and shrub patches above high tide line. Nests from sea level to timberline.

SPECIFIC HABITAT ELEMENTS: Nests in low shrubs (generally less than 3 m tall) (e.g. alders, willows, birches, small conifers) and openings between shrub clumps with grasses or sedges. Dry sites with similar vegetation profiles and structure also used.

Habitat Requirements - Feeding

HABITAT CLASSES: Forages in reproductive habitats.

SPECIFIC HABITAT ELEMENTS: Forages by scratching through ground litter, gleaning foliage, and sallying from the ground after flying insects. Omnivorous. Eats insects, insect larvae, spiders, grass, and weed seeds.

Territory/Home Range

No local information. Bent (1968) estimated average territory size to be 1 ha.

Activity and Movement Patterns

Diurnal. Migratory. Spring migration occurs in the south in April and in the north, in May. Autumn migration occurs from mid August to early October.

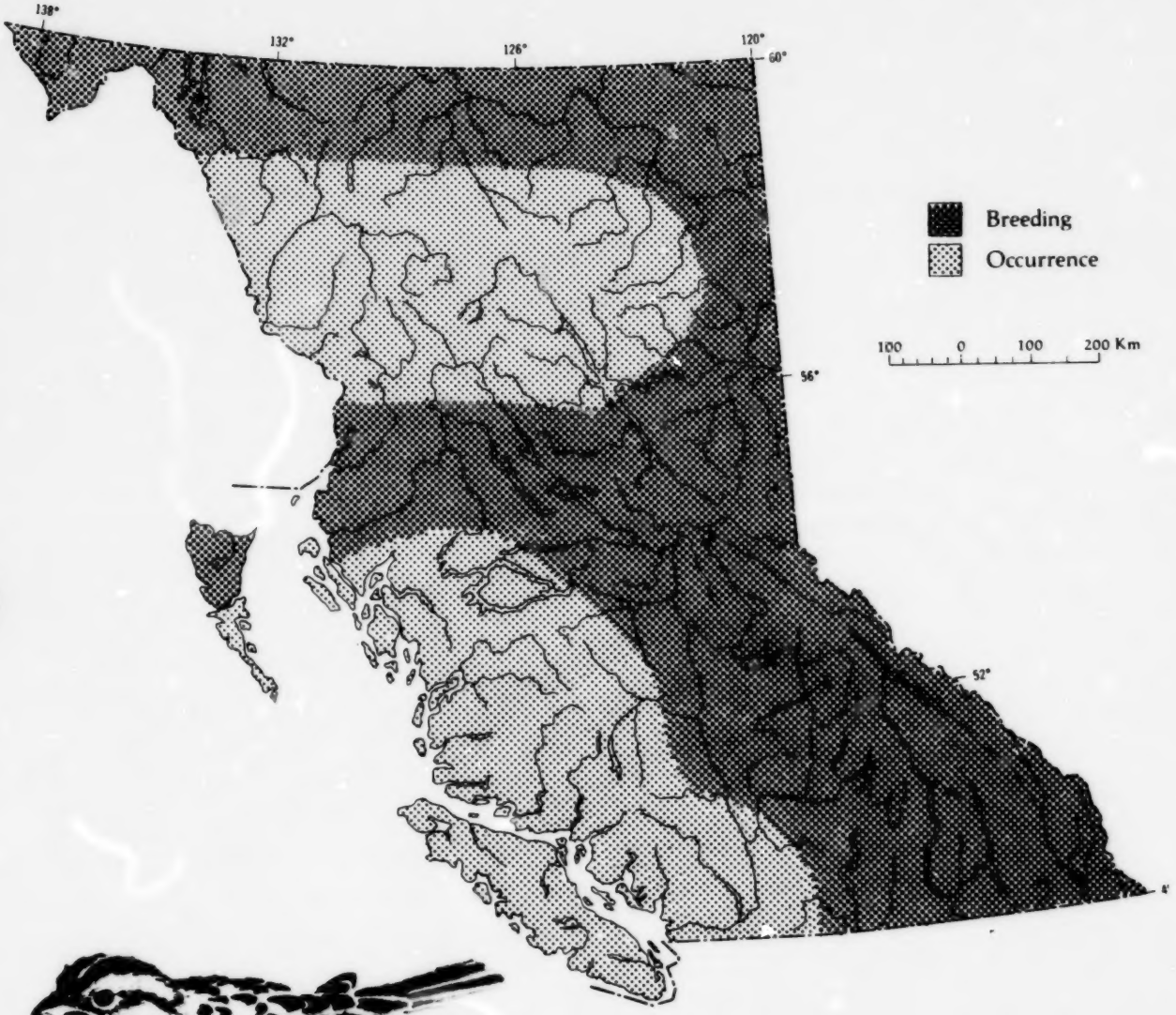
Status

Not in jeopardy. Migratory insectivorous bird. Protected by the Migratory Birds Convention Act (1917) and the British Columbia Wildlife Act (1982).

Selected References

Bent 1968; Miller 1939.

Lincoln's Sparrow



Dark-eyed Junco
DEJU
Junco hyemalis (Linnaeus)
[Slate-colored Junco, Oregon Junco]

Distribution, Seasonality and Abundance

Very common resident along coastal areas; uncommon resident throughout the rest of the province.

Habitat Requirements - Reproduction

HABITAT CLASSES: Breeds in openings and along edges in a wide variety of habitat classes. Strong preference for nesting in or near coniferous forests, but will also use deciduous and mixed stands as well as many open habitat types. Often breeds in shrub dominated environments including regenerating clearcuts and burns, residential and agricultural areas, deciduous riparian areas, and wetland habitats. Frequently found breeding at higher elevations into alpine tundra.

SPECIFIC HABITAT ELEMENTS: Nests primarily on the ground; prefers open shrub layer. Where forest stand is dense, nests in most open part. If a shrub layer absent, places nest in ground cavities. Dry well aerated soil of primary importance for dry nest site. Majority of nests in or on ground, frequently well concealed by overhanging plants, fallen logs, slash, or rocks. Also readily uses cutbanks.

Habitat Requirements - Feeding

HABITAT CLASSES: Forages in a wide range of habitat classes. Frequently forages in clearings, especially slash covered clearcuts. In winter forages in residential and agricultural areas.

SPECIFIC HABITAT ELEMENTS: Predominantly a ground forager but will glean shrubs and tree foliage and sally for aerial prey. Eats seeds, ants, weevils, beetles, flies, caterpillars, and insect larvae. Almost exclusively herbivorous in winter.

Territory/Home Range

No local information. Average territory size was 0.5 ha in Ontario (Martin 1960) and 0.8 to 1.2 ha in New York (Bent 1968).

Activity and Movement Patterns

Diurnal. Some altitudinal and latitudinal migration in fall. Many overwinter along coast and southern Interior. Congregate in flocks in nonbreeding season.

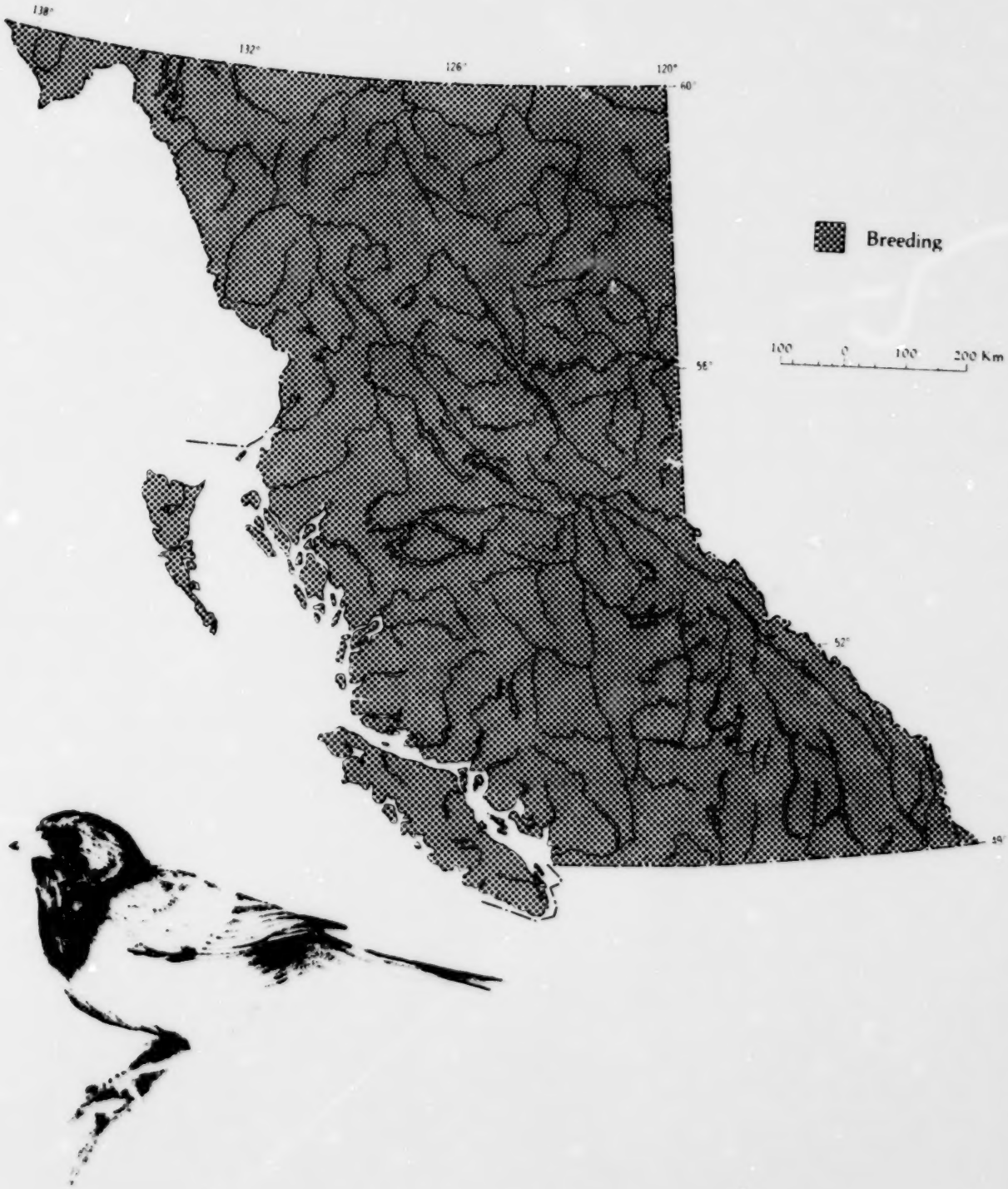
Status

Not in jeopardy. Migratory insectivorous bird. Protected by the Migratory Birds Convention Act (1917) and the British Columbia Wildlife Act (1982).

Selected References

Adams 1947; Gashwiler and Ward 1968; Gottfried and Franks 1975; Horvath 1963.

Dark-eyed Junco



Western Meadowlark
WEME
Sturnella neglecta Audubon

Distribution, Seasonality and Abundance

Common breeder throughout south-central and coastal British Columbia. Most abundant south of Quesnel and east of Coast Mountains. May overwinter in Okanagan area and along southwest coast.

Habitat Requirements - Reproduction

HABITAT CLASSES: Breeds in native grasslands and pastures, with or without shrub cover, including southern bunchgrass steppe, sagebrush steppe, cultivated fields, and orchards. May also use dry open mountain parklands and occasionally sapling stage trembling aspen forests.

SPECIFIC HABITAT ELEMENTS: Nests on ground in relatively open terrain, where there is a thick growth of weeds and grasses, including vacant lots in urban areas. Nest frequently placed in clump of grasses, beneath sheltering vegetation. May fashion dome shaped roof over nest, possibly for thermal regulation or antipredator cover.

Habitat Requirements - Feeding

HABITAT CLASSES: Forages normally within territory during nesting season. Most foraging within open fields, sagebrush or bunchgrass steppe, and agricultural areas, but will also forage in young deciduous stands. Overwintering birds congregate where food is readily available, especially feed lots.

SPECIFIC HABITAT ELEMENTS: Almost exclusively a ground forager; will glean food from grasses and annuals and from ground. May probe soil for insect eggs and larvae. Omnivorous. Consumes caterpillars, wasps, ants, grasshoppers, crickets, craneflies, spiders, sowbugs, small snails, weed seeds, and large amounts of grains including oats, wheat, barley, and corn.

Habitat Requirements - Special Needs

SPECIFIC HABITAT ELEMENTS: Low profile, dense or clumped vegetation with taller shrubs or trees for songposts.

Territory/Home Range

No local information. In Wisconsin, territories ranged from 1.2 to 6.1 ha (Lanyon 1956); in Iowa, they ranged from 4.0 to 12.9 ha (Kendeigh 1941). Home range apparently same as territory.

Activity and Movement Patterns

Diurnal. Generally migratory. Majority summer residents only. Spring migrants arrive from late February to mid March; most autumn migrants leave by October.

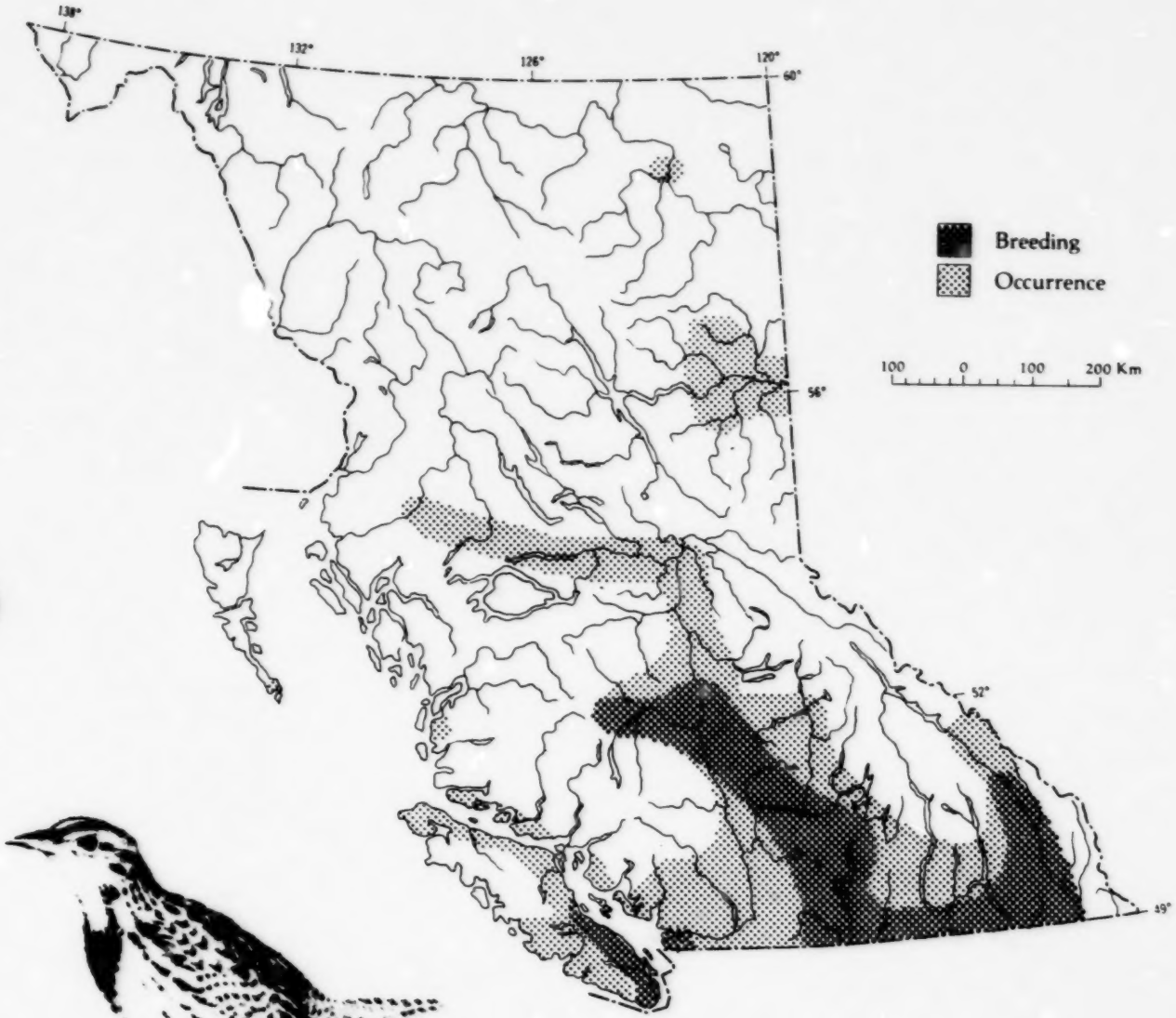
Status

Not in jeopardy. Migratory insectivorous bird. Protected by the Migratory Birds Convention Act (1917) and the British Columbia Wildlife Act (1982).

Selected References

Bent 1958.

Western Meadowlark



Yellow-headed Blackbird
YHBL
Xanthocephalus xanthocephalus (Bonaparte)

Distribution, Seasonality and Abundance

Common local breeder in southern half of British Columbia, east of the Coast Mountains. May occasionally winter along southern coast.

Habitat Requirements - Reproduction

HABITAT CLASSES: Breeds primarily in fresh emergent wetlands dominated by bulrushes. Prefer large, marshy areas with relatively deep water and extensive patches of open water. Deep sloughs and lake margins will be used providing there is adequate emergent vegetation. Water depth usually 0.7 to 1.2 m or more.

SPECIFIC HABITAT ELEMENTS: Nests in emergent vegetation adjacent to open water. Only a few aquatic emergents adequate with bulrushes and cattails best. Nests placed 0.1 to 1 m above surface of water.

Habitat Requirements - Feeding

HABITAT CLASSES: Forages in adjacent agricultural areas, grasslands, and lake shores. Follows behind ploughs turning the soil.

SPECIFIC HABITAT ELEMENTS: Primarily a ground forager, but will perch in low vegetation to glean and regularly sallies out for flying insects. Omnivorous. Eats beetles, weevils, ants, grasshoppers, wasps, dragonflies, damselflies, caterpillars, grubs, grain (especially oats, corn and wheat), weed seeds and fruit.

Habitat Requirements - Pattern

Wetlands with relatively deep water, abundant sturdy emergent plants along edges and proximity to agricultural areas, natural meadows, or lake shores.

Territory/Home Range

No local information. Great size range depending on locality and vegetation (and perhaps initial settling density). Willson (1966) found a range from 0.003 to 0.4 ha. Thomas (1979) reported territories from 0.4 to 2.0 ha. Individuals foraged up to 1.6 km from territories (Willson 1966).

Activity and Movement Patterns

Diurnal. Migratory. Spring migration occurs from late March to mid April; autumn migration occurs from mid August to early September.

Status

Not in jeopardy. Protected by the British Columbia Wildlife Act (1982).

Selected References

Bent 1965; Campbell and Meugens 1971; Orions 1980.

Yellow-headed Blackbird

Pine Grosbeak
PIGR
Pinicola enucleator (Linnaeus)

Distribution, Seasonality and Abundance

Uncommon resident, rarely in flocks, throughout the province.

Habitat Requirements - Reproduction

HABITAT CLASSES: Breeds in subalpine forests, such as mixed coastal subalpine forests, coastal subalpine parklands, white spruce- subalpine fir forests, interior subalpine parklands, Engelmann spruce-subalpine fir forests and subalpine fir -birch forests. Semi-open forests preferred with either clumps of stunted conifers or large trees.

SPECIFIC HABITAT ELEMENTS: Nests in trees, normally close to stand edges adjacent to meadows, clearings, or streams. Nest heights range from near ground to 15 m.

Habitat Requirements - Feeding

HABITAT CLASSES: Forages in reproductive habitats, mostly in conifers. In winter, forages in lowland deciduous riparian vegetation.

SPECIFIC HABITAT ELEMENTS: Gleans food from trees, shrubs, and ground. In summer, diet mostly seeds, fruit, and buds, plus some insects such as flies, beetles, and caterpillars. Winter diet consists of remnant fruit, berries, and buds, plus seeds of grasses, weeds, and shrubs.

Territory/Home Range

No local information. In spruce - fir forests in Utah, average diameter of territories 356 m (10.5 ha) (French 1954).

Activity and Movement Patterns

Diurnal. Nonmigratory. Normally altitudinal shifts and some latitudinal movements in spring and autumn, dependent on severity of winter and food availability. In the Okanagan, moves to lowland in November and returns to mountainous areas in March.

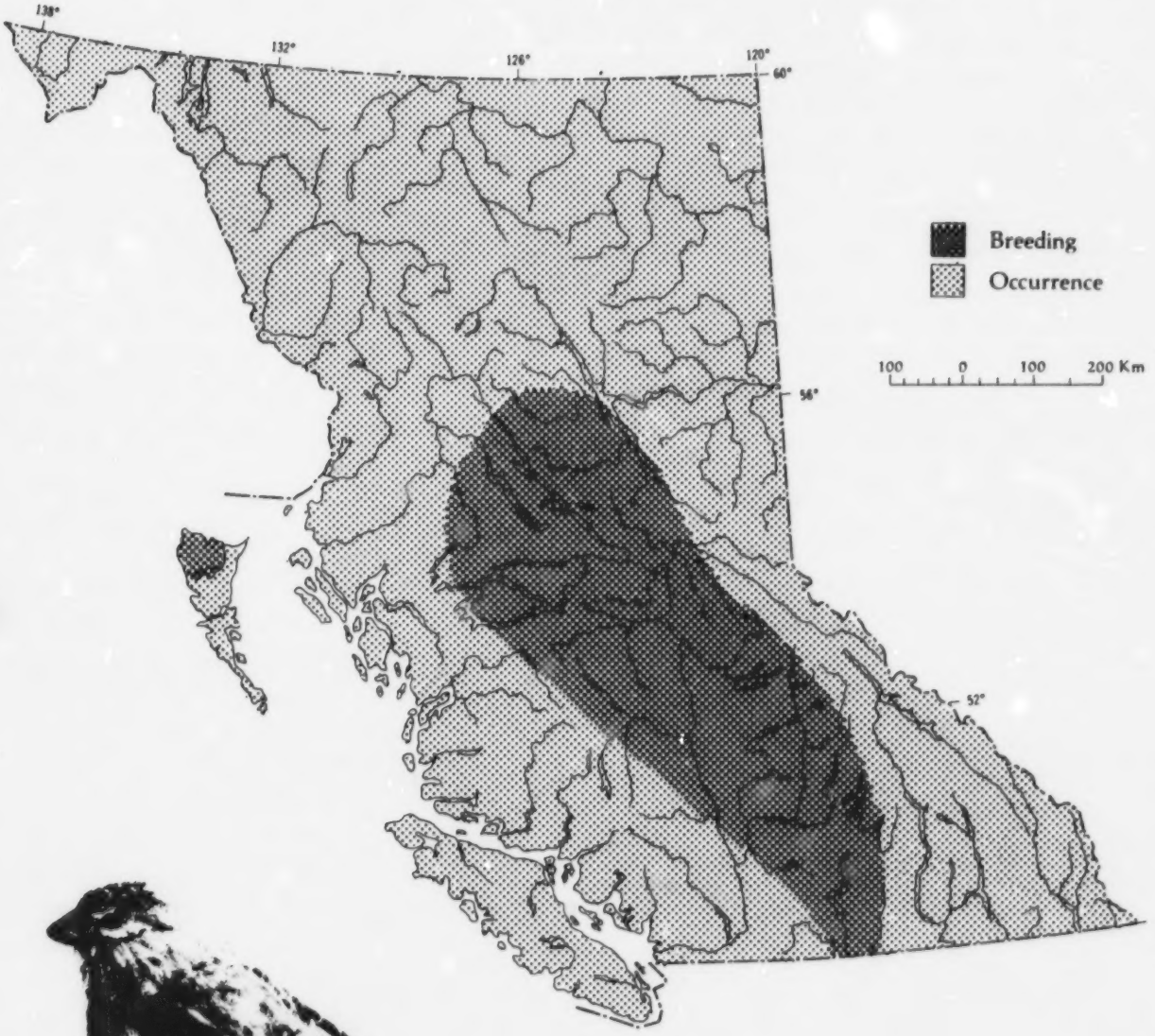
Status

Not in jeopardy. Migratory insectivorous bird. Protected by the Migratory Birds Convention Act (1917) and the British Columbia Wildlife Act (1982).

Selected References

Bent 1968.

Pine Grosbeak



Red Crossbill
RECR
Loxia curvirostra Linnaeus

Distribution, Seasonality and Abundance

Uncommon to abundant resident throughout the province.

Habitat Requirements - Reproduction

HABITAT CLASSES: Breeds in most coniferous or mixed forest habitats. Relatively open stands of Douglas-fir or spruces (with abundant cones) favoured.

SPECIFIC HABITAT ELEMENTS: Nests in coniferous trees. Nest heights range from 3 to 20 m above ground.

Habitat Requirements - Feeding

HABITAT CLASSES: Forages primarily in conifer-dominated forest habitats. Also forages in deciduous forests, deciduous riparian thickets, garden shade trees, and on ground.

SPECIFIC HABITAT ELEMENTS: Extracts seeds from cones of lodgepole pine, ponderosa pine, spruces, Douglas-fir, hemlocks, and larches. Buds and seeds of birches, alders, willows, trembling aspen, maples, and spruces are also used. Small fruit, dandelion, ragweed and cow parsnip seeds, aphids, and insect larvae are occasionally used. Is attracted to salt (e.g. along roads).

Habitat Requirements - Special Needs

SPECIFIC HABITAT ELEMENTS: Dense foliage may be important for thermal protection when roosting.

Territory/Home Range

No information available.

Activity and Movement Patterns

Diurnal. In winter congregates in flocks. Highly erratic species; numbers and occurrence directly related to cone crop production.

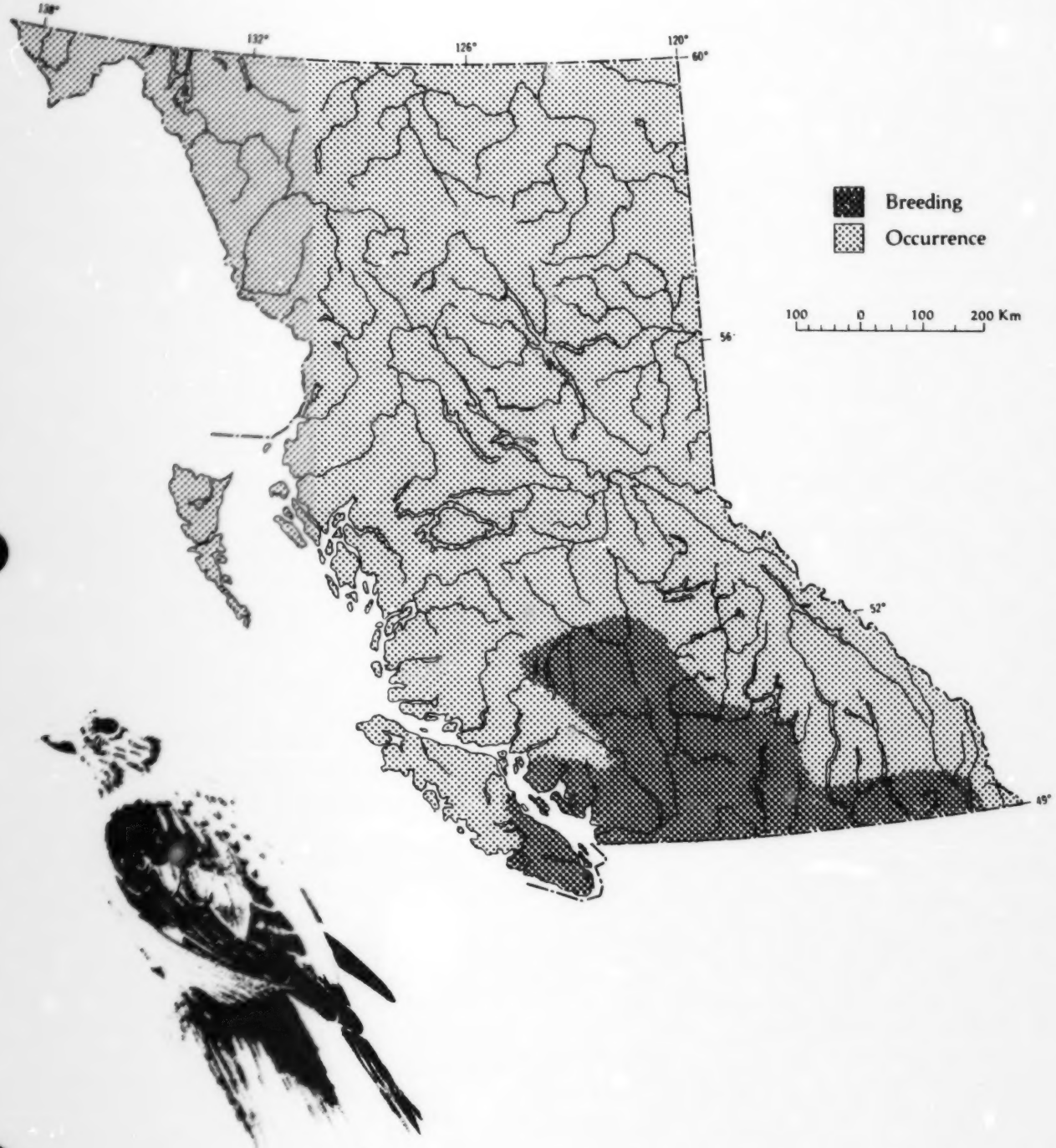
Status

Not in jeopardy. Migratory insectivorous bird. Protected by the Migratory Birds Convention Act (1917) and the British Columbia Wildlife Act (1982).

Selected References

Bailey *et al.* 1953; Bent 1968; Griscom 1937; Pulliainen 1971, 1972.

Red Crossbill



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5
Appendices

5. APPENDICES

Appendix 5.1 Phylogenetic Listing

The following taxonomic list of selected birds for which species notes have been written, follows the sequence of the American Ornithologist's Union (1983).

CLASS: AVES (Birds)

ORDER: PODICIPEDIFORMES (Grebes)

FAMILY: PODICIPEDIDAE (Grebes)

Pied-billed Grebe	*Podilymbus podiceps*

ORDER: CICONIIFORMES (Herons, Ibises, Storks, and Allies)

FAMILY: ARDEIDAE (Bitterns and Herons)

Great Blue Heron	*Ardea herodias*

ORDER: ANSERIFORMES (Swans, Geese and Ducks)

FAMILY: ANATIDAE (Swans, Geese, and Ducks)

Wood Duck	*Aix sponsa*
Barrow's Goldeneye	*Bucephala islandica*

ORDER: FALCONIFORMES (Diurnal Birds of Prey)

FAMILY ACCIPITRIDAE (Eagles, Hawks, and Allies)

Osprey	*Pandion haliaetus*
Northern Goshawk	*Accipiter gentilis*
Swainson's Hawk	*Buteo swainsoni*
Red-tailed Hawk	*Buteo jamaicensis*

FAMILY: FALCONIDAE (Falcons)

American Kestrel	*Falco sparverius*

ORDER: GALLIFORMES (Gallinaceous birds)

FAMILY: PHASIANIDAE (Partridges, Grouse, Turkeys, and Quail)

Spruce Grouse	*Dendragapus canadensis*
Blue Grouse	*Dendragapus obscurus*
Ruffed Grouse	*Bonasa umbellus*
Sharp-tailed Grouse	*Tympanuchus phasianellus*

ORDER: GRUIFORMES (Cranes, Rails and Allies)

FAMILY: GRUIDAE (Cranes)

Sandhill Crane	*Grus canadensis*

ORDER: CHARADRIIFORMES (Shorebirds, Gulls, Auks, and Allies)

FAMILY: SCOLOPACIDAE (Sandpipers, Phalaropes, and Allies)

Greater Yellowlegs	*Tringa melanoleuca*
Solitary Sandpiper	*Tringa solitaria*
Long-billed Curlew	*Numenious americanus*

ORDER: STRIGIFORMES (Owls)

FAMILY: STRIGIDAE (Typical Owls)

Flammulated Owl	*Otus flammeolus*
Burrowing Owl	*Athene cunicularia*
Barred Owl	*Strix varia*
Northern Saw-whet Owl	*Aegolius acadicus*

ORDER: PICIFORMES (Woodpeckers)

FAMILY: PICIDAE (Woodpeckers)

Lewis' Woodpecker	*Melanerpes lewis*
Downy Woodpecker	*Picoides pubescens*
Hairy Woodpecker	*Picoides villosus*
White-headed Woodpecker	*Picoides albolarvatus*
Three-toed Woodpecker	*Picoides tridactylus*
Northern Flicker	*Colaptes auratus*
Pileated Woodpecker	*Dryocopus pileatus*

ORDER: PASSERIFORMES (Passerine Birds)

FAMILY: HIRUNDINIDAE (Swallows)

Tree Swallow	*Tachycineta biocolor*

FAMILY: CORVIDAE (Jays, Magpies, and Crows)

Clark's Nutcracker	*Nucifraga columbiana*

FAMILY: PARIDAE (Titmice)

Mountain Chickadee	*Parus gambeli*
Boreal Chickadee	*Parus hudsonicus*

FAMILY: Sittidae (Nuthatches)

Red-breasted Nuthatch	*Sitta canadensis*
Pygmy Nuthatch	*Sitta pygmaea*

FAMILY: CERTHIIDAE (Creepers)

Brown Creeper	*Certhia americana*

FAMILY: MUSCICAPIDAE (Kinglets, Bluebirds, Thrushes, and Allies)

Mountain Bluebird	*Sialia currucoides*
Hermit Thrush	*Catharus guttatus*
Varied Thrush	*Ixoreus naevius*

FAMILY: MIMIDAE (Mockingbirds, Thrashers, and Allies)

Sage Thrasher	*Oreoscoptes montanus*

FAMILY: BOMBYCILLIDAE (Waxwings)

Bohemian Waxwing	*Bombycilla garrulus*

FAMILY: EMBERIZIDAE (Wood Warblers, Sparrows, Blackbirds, and Allies)

Yellow-rumped Warbler	*Dendroica coronata*
Townsend's Warbler	*Dendroica townsendi*
Brewer's Sparrow	*Spizella breweri*
Song Sparrow	*Melospiza melodia*
Lincoln's Sparrow	*Melospiza lincolnii*
Dark-eyed Junco	*Junco hyemalis*
Western Meadowlark	*Sturnella neglecta*
Yellow-headed Blackbird	*Xanthocephalus xanthocephalus*

FAMILY: FRINGILLIDAE (Finches)

Pine Grosbeak	*Pinicola enucleator*
Red Crossbill	*Loxia curvirostra*

Appendix 5.2. General Bird Texts

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Guiguet, C.J. 1964. The birds of British Columbia (8): chickadees, thrushes, pipits, waxwings, and shrikes. Handbook 22. B.C. Provincial Museum, Victoria. 66pp.

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Johnsgard, P.A. 1973. Grouse and quail of North America. University of Nebraska Press, Lincoln. 553pp.

Johnsgard, P.A. 1981. The plovers, sandpipers and snipes of the world. University of Nebraska Press, Lincoln. 493pp.

Karalus, K.E., and A.W. Eckert. 1974. The owls of North America. Doubleday, Garden City, N.Y. 278pp.

Appendix 5.3. Glossary

Alpine: the parts of a mountain above the cold limits of tree growth, but below permanent snow.

Bog: a cold, wetland ecosystem characterized by an accumulation of peat, acidic conditions, and the dominance of sphagnum moss; usually accompanied by low shrubs of the heather family and sometimes stunted conifers.

Boreal: general term relating to northern geographic regions.

Browse: to eat plant material, usually by pecking or biting off segments; also the plant material that is eaten is often referred to as browse.

Canopy: the uppermost, spreading, branchy layer of a forest.

Carnivorous: subsisting or feeding on animal tissue.

Carr: a fen woodland dominated by scrub-like alder and willow, insufficiently acidic to support sphagnum moss.

Crepuscular: active during the twilight periods of dusk and dawn

Diurnal: active during the daylight hours.

D.B.H.: tree diameter measured at breast height (1.5 m).

Ecosystem: a community of interdependent organisms together with the environment they inhabit and with which they interact; includes all other living and non-living factors that affect them.

Edge: the place where two or more vegetation types meet.

Emergent: plants rooted in shallow water and having most of the vegetative growth above water.

Estuarine: pertaining to, or located in a semi-enclosed body of water that has a free connection with the ocean and within which sea water is measurably diluted with freshwater derived from land drainage.

Fen: a wetland dominated by sedges; unlike a bog, is alkaline or only slightly acidic, supports limited growth of sphagnum moss.

Flycatching: feeding by flying from an exposed perch, catching flying insects in the air and then returning to (usually) the same perch.

Gleaning: feeding by picking animal or vegetable matter from leaf, trunk or other surfaces.

Habitat: the place where an organism lives; pertains to the biological, chemical and physical features at such locations.

Hawking: catching insects by flying about with mouth open (e.g. how swallows feed).

Herb: a plant with no persistent woody stem above ground.

Herbivorous: subsisting or feeding on plant tissue.

Home Range: the area covered by an individual for all activities (e.g. feeding, reproduction, maintenance).

Humus: the finely divided, amorphous organic material that is diffused through the mineral soil, imparting a dark colour to it.

Hymenoptera: an order of insects having four membranous wings; the hind wings are smaller than the front wings (wasps, bees, ants).

Incubate: to maintain by sitting on, conditions (heat and humidity) that are favourable to the development and hatching of eggs.

Insectivorous: subsisting or feeding on insects.

Irruptive: undergoing sudden large-scale changes in local populations inresponses to food abundance or shortage; characteristic of many species that depend on cone crops for winter survival.

Lacustrine: pertaining to, or inhabiting a lake.

Lek: a specific fixed area where communal courtship displays occur, within a lek are individually-owned display territories aggressively defended by each male.

Marine: pertaining to, or inhabiting the sea.

Marsh: a wetland characterized by cattails and sedges, soil largely of mineral basis that is saturated for long periods (if not permanently), but without the surface accumulation of peat.

Meadow: dense grasslands, usually rich in herbs, with the grasses having relatively broad and soft blades, and occurring in relatively moist areas.

Migratory: displaying deliberate (and frequently seasonal) movement from one region or habitat to another.

Muskeg: a thick deposit of partially decayed vegetation (frequently sphagnum) of wet boreal regions.

Niche: the functional role of an organism within its community including its activities and relationships.

Nocturnal: active only during the period of darkness.

Omnivorous: subsisting or feeding on plant and animal tissue.

Palustrine: pertaining to, or inhabiting marshes or similar wetlands.

Parkland: an area characterized by patches of understory vegetation abundantly distributed throughout a more-or-less continuous forest or woodland.

Passerine: perching birds having the following characteristics: feet adapted to perching on stems or twigs; toes unlobed, three in front and one behind, joined at the same level.

Raptor: any bird of prey, including eagles, hawks, falcons and owls.

Riparian: pertaining to, or located on the bank of a body of water (e.g. river, pond, lake), often characterized by a narrow band of deciduous shrubs and trees.

Riverine: pertaining to, or located along a river.

Roosting: resting or sleeping.

Saline: consisting of or containing salts.

Sally: see flycatching.

Shrub: a low-growing, woody perennial, which, unlike a small tree, branches from the base; often restricted to plants less than 6 m in height.

Site Fidelity: returning to the same nest, site, or territory year after year.

Slash: the wood debris left following logging.

Slough: a creek or river channel in a marsh or tidal flat.

Snag: dead or mostly dead standing trees.

Staging area: communal resting and/or feeding areas of importance during migration.

Steppe: an extensive, treeless grassland in areas that are too dry for natural forests in upland regions.

Successional Stage: a point in the progressive natural development of vegetation towards a climax, during which one community (or stage) is gradually replaced by others.

Talus: the slope (or the rock fragments) formed by fallen rock debris or slide-rock at the foot of a cliff.

Territory: the portion of an individual's home range defended against others, usually members of the same species.

Timberline: a transitional stage as the limit of tolerance of trees along a scale of gradually decreasing temperature and increasing wind, with dependent subordinates accompanying the trees upslope only as far as their protection extends, whereas wind tolerant but shade intolerant plants from above dominish downslope as tree cover becomes more and more continuous.

Understory: the lower layer of trees in a two-layered forest or woodland.

Wetland: an area covered permanently, occasionally, or periodically by fresh or salt water.

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